Appendix C:

July 21, 2016 Board Hearing Testimonies

Comments received as testimony at the Board Hearing,

July 21, 2016

impressive. And so I'm extremely encouraged that we'll be able to tackle the PM2.5 with the same great results.

So congratulations, San Joaquin Valley, and congratulations, staff.

BOARD MEMBER SHERRIFFS: Second.

CHAIR NICHOLS: We have a motion and a second.

Any further discussion on this item?

BOARD MEMBER RIORDAN: Madam Chair, I just want to make one comment about -- and I certainly support this.

The staff or someone must have worked very hard to have our monitor accepted. And I want to acknowledge that, because that was, I remember, a big issue at one time. And so I know it takes time and some lobbying and whatever else, but you are to be congratulated.

CHAIR NICHOLS: Thank you. I agree.

All right. I think we can probably just do this on a voice vote then based on the comments so far.

Would all in favor of the Resolution Number 16-8 please say aye.

(Unanimous aye vote.)

CHAIR NICHOLS: Any opposed?

Any abstentions?

Okay. Very good.

Thank you all.

The next item on our agenda is proposed

OG-Testimony 7-2016 Hearing

Testimony for this board item begins on page 58 of the transcript.

regulation for greenhouse gas emission standards for crude oil and natural gas facilities.

Both the 2008 Climate Change Scoping Plan and the subsequent first update to the Climate Change Scoping Plan identified the oil and gas sector as a large source of greenhouse gas emissions. Both plans include the regulation of oil and gas operations that is covered in the proposed regulation that's before us now as a potential measure to help achieve the goals of SB 32 -- sorry -- of AB 32. That was a Freudian slip. It's AB 32.

(Laughter.)

CHAIR NICHOLS: Methane is particularly effective short-lived climate pollutant and is also the second largest man-made contributor to greenhouse gas emissions globally.

The recently proposed short-lived climate pollutant strategy includes a 40 percent reduction of methane by 2030, with a 40 to 45 percent reduction from the oil and gas sector as a whole by 2025. The proposed regulation is expected to achieve a reduction of more than 40 percent in methane emissions from all oil and gas upstream sectors such as oil and natural gas production, processing, and storage facilities. It will reduce methane emissions from the sources covered by the proposed regulation by more than 50 percent.

Now, I can't resist, particularly as a Southern California resident, pointing out that the recent events in Aliso Canyon remind us that we have an aging infrastructure that's used at quite a number of oil and gas facilities throughout California, and that we have a great need to conduct regular and routine emissions testing at facilities in order to quickly pinpoint the sources of emissions and ensure that leaks are repaired before they have a chance to grow into disasters.

Fixing these leaks will also require that we reduce -- it will also have the effect - I'm sorry - of reducing emissions of volatile organic compounds and toxic air contaminants. So there are multiple benefits beyond just climate change from these cleanup activities.

Many oil and gas facilities are located in or near disadvantaged communities as well. And this regulation will also reduce over a hundred tons per year of toxic emissions that have an impact on those communities, including non-disadvantaged. But there is a -- unfortunately, a correlation.

Okay. Mr. Corey, would you please introduce this item.

EXECUTIVE OFFICER COREY: Yes. Thanks, Chair.

This regulation will substantially reduce methane emissions from upstream oil and gas production equipment;

natural gas gathering and boosting stations and processing plants; natural gas transmission compressor stations and underground natural gas storage facilities.

In 2009, staff conducted a comprehensive study of the sector which included site visits, field testing, and a detailed survey of the related equipment. In over the past few years, staff conducted multiple public workshops and numerous meetings with individual stakeholders. Staff also consulted with the Environmental Justice Advisory Committee.

ARB will be working on agreements with the air districts to finalize the roles and responsibilities. We're also exploring opportunities to assist the air districts with the costs associated with implementing and enforcing the regulations.

The federal government has also recently finalized rules controlling methane from sources in this sector and is expected to continue to regulate in this area. Therefore ARB is taking care to ensure that ARB rules can also support compliance with federal rules where applicable, as well as securing further reductions.

Comments as to the timing of this particular rulemaking had been raised, with some comments asking that the process be sped up, others that it be extended. Therefore, before I turn the program -- the presentation

over to program staff, I've asked Ellen Peter, Chief Counsel, to give an overview of the overall timelines and required elements of California's rulemaking process, as it should provide some useful context.

So with that, Ellen.

CHIEF COUNSEL PETER: Thank you.

In a 1979 statute The Office of Administrative Law, or OAL, was established as the statewide agency to ensure a clearer orderly process for adoption of State regulations.

OAL's training course is three days. So what I'm providing here in the next few minutes is a very brief overview of the process.

(Laughter.)

CHIEF COUNSEL PETER: I should note that before the formal OAL rulemaking process begins, typically ARB staff has been involved in one or more years of work. The work includes workshops, site visits, conducting studies and analysis, and one-on-one meetings with stakeholders.

One key element in the rulemaking process is notice to the public. This notice is to ensure an open, transparent process; and the steps include notice of what's to be changed, notice of the proposed regulatory language to be considered, what is the reasoning for the proposed changes - and this reasoning's reflected in the

Initial Statement of Reasons, or ISOR - and what are the impacts of the proposed change, both economic and environmental impacts.

A second key element is soliciting and considering the input from the public.

The OAL process must be completed within one year from the published regulatory notice, and formal comment periods are also required. These comments can be on the proposed regulation and also can be on the possible environmental impacts of any proposal.

The first formal OAL comment period is 45 days, and that's triggered by OAL's publication of the notice.

At ARB there's at least one public board meeting where the proposal is considered. If further refinements to the proposal are made, OAL requires a subsequent formal notice and a new comment period which is at least 15 days. If there are possible environmental impacts, staff must prepare written responses to comments on these environmental impacts and then give these responses to the Board to consider before it acts on the proposal.

Thus, if there's 15-day changes and if environmental comments are anticipated, many of our items require two board hearings. And that's the case with this one today, the proposed oil and gas regulation, and it's to be set to be considered for a vote when it returns to

the Board in early 2017.

The next key element before the proposed rulemaking package goes to OAL is the documentation of the comments and decisions. This is the final statement of reasons. It's prepared and it lists all the formal comments and the responses.

After the entire package is given to OAL, their staff has up to 30 working days to review and approve. Once approved, OAL submits to the Secretary of State and specifies the effective date of the new regulation.

After a regulation is final, there's often lead time built in to allow the regulated companies to come into compliance.

In this case for proposed oil and gas regulation, there's also lead time for the local air districts to take their implementation steps. For example, if a local air district wants to adopt its own regulations to inspect or enforce, this air district will need to comply with its own rule adoption process.

So I hope this brief summary is helpful in clarifying some of the legally required steps to adopt our regulations.

And I will turn it back to Richard.

CHAIR NICHOLS: Thank you.

If there are no questions at this point -- they

may come up later. But for now I think that's a good introduction. This process has gotten longer and more complicated over time. But I think that the staff has laid it out in a way that makes it clearer that there is room for new information and for change as information becomes available.

Thanks.

EXECUTIVE OFFICER COREY: That's correct. Thank you, Chair.

So now I'm going to ask Joe Fischer of the Industrial Strategy's Division to give the staff presentation.

Joe.

(Thereupon an overhead presentation was Presented as follows.)

AIR RESOURCES ENGINEER FISCHER: Thank you, Mr. Corey. Good morning, Chair Nichols and members of the Board.

Today I'll be presenting the proposed regulation for greenhouse gas emission standards for crude oil and natural gas facilities.

--o0o--

AIR RESOURCES ENGINEER FISCHER: I'll begin by providing a little background, touch on some closely related oil and gas efforts, and briefly discuss oil and

gas operations in California. I will then present the proposed regulation, its impacts, and Staff's recommended 15-day changes.

--o0o--

AIR RESOURCES ENGINEER FISCHER: Now I'll go through a little background.

--o0o--

AIR RESOURCES ENGINEER FISCHER: Both the original and 2013 update to the AB 32 scoping plan identified the oil an gas sector as a significant source of methane emissions. The proposed regulation covers intentional vented emissions as well as unintentional fugitive emissions or leaks.

In addition to AB 32, the proposed short-lived climate pollutant strategy includes a 40 to 45 percent reduction in methane from the oil and gas sector by 2025.

Finally, several measure contained in the proposal reduce emissions from well stimulation events and fracking, which are the focus of SB 4.

--o0o--

AIR RESOURCES ENGINEER FISCHER: This slide shows methane emissions in California. Methane is emitted from a wide range of sources, including agriculture, waste handling, and oil and gas related activities. In 2013, methane emissions from oil and gas extraction, storage,

pipelines, and natural gas seeps accounted for approximately 15 percent of the total methane emissions in California.

--o0o--

AIR RESOURCES ENGINEER FISCHER: It's important to briefly discuss the roles of both ARB and the districts and how they interact when it comes to addressing criteria pollutants and precursors, toxic air contaminants, and greenhouse gases.

In general, the local districts are primarily responsible for stationary sources, such as oil and gas production facilities, while the ARB is responsible for mobile sources, fuels, and consumer products.

However, because ARB is the primary agency responsible for implementing AB 32, ARB's responsibility includes stationary sources if GHGs are involved, as is the case with today's proposed regulation.

--o0o--

AIR RESOURCES ENGINEER FISCHER: I'll now briefly discuss other related oil and gas efforts by ARB and other agencies.

--o0o--

AIR RESOURCES ENGINEER FISCHER: As I mentioned, the local air districts play a major role in reducing emissions from stationary sources. In fact, some

districts have been regulating fugitive emissions since the 1980s for the purpose of reducing volatile organic compounds, or VOCs, which are ozone precursors.

However, our proposal covers methane, which has been deemed a non-VOC and therefore specifically exempted from air districts' programs.

Given district staff's experience and knowledge in the oil and gas sector, ARB worked closely with the districts throughout the course of the regulation development process, and we have worked to harmonize the requirements with existing district rules.

--o0o--

AIR RESOURCES ENGINEER FISCHER: We've also been reviewing U.S. EPA actions related to oil and gas facilities. In June, EPA finalized their new source performance standards and is also working on guidelines and rules for existing sources.

Although the source categories proposed today are the same or very similar, our proposal is for both new and existing sources and is generally equivalent or more stringent than EPA's. It's also broader in coverage, which means it applies to more equipment.

We've been working with EPA and the districts to harmonize these requirements as much as possible, in order to prevent confusion, and to streamline the different

testing and reporting requirements.

--o0o--

AIR RESOURCES ENGINEER FISCHER: Located at an underground storage facility in Southern California, the Aliso Canyon gas leak was a significant source of methane emissions. In response to the event, the Governor released an order on Aliso Canyon with specific direction to address the leaking methane. The Division of Oil and Gas and Geothermal Resources, or DOGGR, promulgated emergency regulations and recently published draft permanent regulations for underground storage facilities.

In addition, a report is being developed by the California Council on Science and Technology, along with interagency involvement, to address the long-term viability of storage facilities in California.

In developing this proposal, staff considered Aliso Canyon and other leakage events occurring at underground storage facilities.

--o0o--

AIR RESOURCES ENGINEER FISCHER: In addition to other agencies' actions, I want to touch briefly on other oil and gas related efforts here at ARB. As I mentioned, well stimulation, including fracking, is subject to SB 4, which requires DOGGR to permit these events. ARB is reviewing permits and in some cases requesting air

monitoring for certain activities to ensure that the state is being protective of public health, particularly for stimulated wells near disadvantaged communities.

ARB is also overseeing methane hot spots flyovers, as required by AB 1496. As I will discuss later, these flyovers can aid in tracking progress and compliance.

Finally, we are also involved with other types of testing at oil and gas facilities. We are currently planning to perform testing on produced water percolation ponds, as well as undertake air monitoring near oil and gas impacted communities later this year. Both of these efforts are the result of listening to the environmental justice community's concerns.

--o0o--

AIR RESOURCES ENGINEER FISCHER: I will now take a few minutes describing oil and gas operations in California.

--o0o--

AIR RESOURCES ENGINEER FISCHER: As you can see in this illustration, oil production primarily occurs in the Central Valley and Southern California, and the gas that is produced with the oil is called associated gas. In fact, the majority of gas produced in California is associated gas.

In Northern California, however, natural gas production is not associated with oil production, and called unassociated gas or dry natural gas.

--o0o--

AIR RESOURCES ENGINEER FISCHER: This slide shows that the proposed standards apply to upstream and midstream facilities, including production, gathering and boosting, underground natural gas storage, and natural gas transmission facilities.

The transmission and distribution pipelines and related facilities are covered by a proceeding underway at the California Public Utilities Commission pursuant to Senate Bill 1371. Staff has been working closely with the CPUC and stakeholders on that rulemaking. Overall, these two regulations cover the entire natural gas system.

--o0o--

AIR RESOURCES ENGINEER FISCHER: Before moving into the specific measures, I'd like to provide some background on what a basic crude oil system looks like. A crude oil and water emulsion is pumped from the subsurface and piped into a separator where the oil and water are separated into two different products. The oil is sent to a storage tank while the water is sent to a tank or sump. This figure depicts what we define as a separator and tank system.

If these tanks are opened to the air, they can be a source of air pollutant emissions since they would be the first place the fluid reaches atmospheric pressure and pollutants are released from the emulsion, or "flashed off."

--o0o--

AIR RESOURCES ENGINEER FISCHER: In a dry natural gas system, the basic concept is similar. But here the separator is pressurized and it's used to separate gas from water. This too is defined as a separator and tank system.

--o0o--

AIR RESOURCES ENGINEER FISCHER: I'll now go through the proposed regulation standards.

--o0o--

AIR RESOURCES ENGINEER FISCHER: First, I'll take a moment to talk about the regulation development process to outline some of the work that fed into the regulation proposal.

Staff conducted site visits to a number of facilities located throughout California to learn about the different operations and equipment. We also conducted field testing programs to develop the flash analysis test procedure and undertook a comprehensive survey of oil and gas equipment.

We also formed working groups and held stakeholder meetings to discuss the different strategies options. We held five separate workshops, including one in Bakersfield, to present and solicit feedback on the proposed controls and regulatory language.

--o0o--

AIR RESOURCES ENGINEER FISCHER: This slide summarizes the different proposed controls for the major groups of emission sources, which I will outline in more detail in the following slides.

We are proposing vapor collection for uncontrolled separator and tank systems and leak detection and repair, or LDAR, for leaking connectors and equipment. For underground storage facilities we are proposing additional monitoring requirements. And for other sources, such as compressors and pneumatic devices, we are proposing specific leak standards in addition to LDAR.

--o0o--

AIR RESOURCES ENGINEER FISCHER: The standards we are proposing today apply to separator and tank systems found at all types of oil and gas facilities. Flash analysis testing is required to determine the annual methane emissions, and vapor controls are required for systems with emissions that are above 10 metric tons of methane per year. We have also included an exemption for

very low throughput systems, because staff estimates that those systems will not exceed the proposed emission standard.

--o0o--

AIR RESOURCES ENGINEER FISCHER: Vapor collection systems and control devices are used to handle the collected vapors, and we recognize the importance of reducing NOx emissions whenever possible because NOx is a precursor to ground level ozone. The proposed requirements take a tiered approach to addressing NOx emissions while still controlling the newly collected vapors.

First, operators are required to route any vapors collected as part of this regulation to an existing sales gas, fuel gas, or underground injection system. This ensures that the vapors are handled as efficiently as possible without any undue emission impact.

In the event that the facility cannot handle the vapor using one of these options, the facility must use a low-NOx device to handle the collected vapor. The proposed low NOx standard allows for the use of microturbines, low-NOx incinerators, and any non-combustion technology.

The second part of this proposal requires facilities to replace existing high-NOx emitting flares

with low-NOx devices in the event that their facility is required to control additional vapor as specified in the proposal. This will result in reduced NOx emissions from the exist -- from the existing vapor already being controlled, which will more than offset the overall statewide NOx emissions from combusting vapors due to the proposed regulation.

However, the San Joaquin Valley Air Pollution Control District is planning a study in their flare minimization plan and may require low-NOx devices in the future. Our proposal will get reductions now, and because of the importance of NOx in the valley, ARB will follow the District's rulemaking and it will work with them to quantify and address any additional NOx that warrants further action.

--o0o--

AIR RESOURCES ENGINEER FISCHER: Circulation tanks are used in conjunction with well stimulation treatments, and are primarily used to remove excess sand from a well after hydraulic fracturing. These tanks may contain chemicals related to fracking fluids as well as crude oil and gases contained in the well bore. In order to be health protective, staff is proposing that all circulation tanks be controlled for emissions regardless of emission level.

Because circulation tanks have never been controlled for emissions, we're proposing a phased-in approach for these sources. First, operators must develop a best management practices plan to mitigate the emissions and then must perform a technology demonstration and report back to the ARB on progress. This provides additional time to design and test equipment such as a vapor storage tank or bladder that does not require supplemental fuel gas to operate prior to the January 1st, 2020, deadline when the control requirements take effect.

--o0o--

AIR RESOURCES ENGINEER FISCHER: Leak detection and repair, or LDAR, is a program designed for finding and repairing leaking components. Under this proposal, LDAR will be used to find and repair leaks of methane at all types of facilities, including natural gas facilities which are not covered by most district rules. The proposal requires daily audio-visual inspections to check for obvious emission sources, and quarterly instrument inspections to locate additional leaks that are not easily seen or heard. We've also included a special category of components called critical components, which is designed to address components that require additional time to make repairs.

Under the current proposal, operators could step

down to annual testing after five compliant quarters of testing. However, we will discuss a recommended 15-day change at the end of this presentation revising this proposal.

--o0o--

AIR RESOURCES ENGINEER FISCHER: In addition to LDAR, we are also proposing emissions monitoring requirements for underground gas storage facilities. These requirements are based on the lessons learned from Aliso Canyon and the need for regular monitoring at these high pressure concentrated sites. The proposal includes ambient air monitoring to check for the -- to check the surrounding air for natural gas emissions as well as daily or continuous monitoring at the wellheads for the early detection of leaks.

Because each facility is different, we are proposing requirements that will provide some flexibility for choosing various monitoring systems and different types of instruments. The facilities will need to submit a monitoring plan to ARB for approval.

In the event that a monitoring system detects a leak which is above the specified leak standards, ARB DOGGR, and local district notification is required.

This provision will be taking the place of a similar provision in DOGGR's emergency storage

regulations, as this requires shifts from DOGGR to ARB. This shift is acknowledged in DOGGR's proposed permanent regulations, and DOGGR representatives Rob Habel and Justin Turner are seated at the staff table to respond to any related questions.

--o0o--

AIR RESOURCES ENGINEER FISCHER: Natural gas compressors are used to move gas from production fields through natural gas pipelines, and they can also be found at a number of mid-stream facilities including underground storage facilities.

We are proposing testing and emission standards for both reciprocating and centrifugal compressors, and repairs or replacement for compressors that are measured above the specified emission standard. Alternatively, facilities can capture and control the leaking gas. These requirements are specifically for seals and rod packings and are in addition to LDAR.

--o0o--

AIR RESOURCES ENGINEER FISCHER: Pneumatic devices use natural gas to control when no electricity or compressed air is available. In California, the vast majority of pneumatic devices did not use natural gas. For those that do, the most common types are continuous bleed devices, which vent gas on a continuous basis.

This proposal requires the replacement of continuous bleed devices with non-emitting or no-bleed devices, and the same requirement also applies to natural-gas-powered pneumatic pumps. Alternatively, facilities can capture and control the venting gas with the use of a vapor collection system.

All intermittent bleed devices are subject to LDAR to ensure that they remain sealed when not actuating. According to our data, these are a small portion of devices and estimated emissions.

--o0o--

AIR RESOURCES ENGINEER FISCHER: Finally, we are also proposing two different requirements to quantify emissions from liquids unloading and well casing vents that are open to the atmosphere. These will require operators to perform measurements and report results to ARB annually. Both requirements are designed to collect additional data for possible future rulemaking activity.

--o0o--

AIR RESOURCES ENGINEER FISCHER: The proposed regulation allows both ARB and the districts to enforce the standards. However, both ARB and the districts prefer district implementation because their staffs are local, more familiar with the facilities, and in many cases are already inspecting them.

As a supplement to district permitting, we are also proposing an ARB registration program for equipment not covered under a district permit or registration program to ensure all equipment can be tracked and monitored. The districts have the option to enter into an MOA agreement with ARB for information and data sharing, and we plan to develop an MOA agreement soon after this hearing.

Finally, the districts are encouraged to charge fees to help cover cost of implementation, and they can also keep enforcement penalties. The ARB is also working with the APCOs of affected districts and exploring additional resource options.

--o0o--

AIR RESOURCES ENGINEER FISCHER: This slide shows the implementation dates for the proposal. Beginning January 1st, 2018, the testing, leak detection and repair requirements, gas storage monitoring plans, and registration and permitting programs would first be implemented. This is when operators will begin to measure emissions at their facilities and repair leaking components, and provides time for the installation and permitting of new equipment.

Beginning January 1st, 2019, the equipment change-outs go into effect. This includes vapor

collection and control devices as well as pneumatic devices and compressor seal change-outs.

Finally, beginning January 1st, 2020, all circulation tanks must be controlled with the use of a vapor collection system. These tanks were provided additional time for implementation in order to design and test control equipment.

--o0o--

AIR RESOURCES ENGINEER FISCHER: Included in this proposal are several ways that we plan to track implementation progress. The metrics include equipment installation and reported emissions.

The registration and permitting programs will allow ARB and the districts to monitor equipment, and reporting requirements will be used to update the emissions inventory. I will also note that we are investigating the possibility of including a web-based reporting tool to simplify the reporting requirements.

Finally, we also plan to use other research efforts such as community monitoring and aerial flyover data to support the tracking of progress.

--o0o--

AIR RESOURCES ENGINEER FISCHER: I will now discuss the anticipated impacts from the proposed regulation.

--o0o--

AIR RESOURCES ENGINEER FISCHER: Overall, this proposal results in just over 1.5 million metric tons of reductions at an annual cost of just over $22 million, for a cost effectiveness of about $15 per metric ton of carbon dioxide equivalent reduced. These results were determined while considering annual natural gas savings and computing the emissions based on a 20-year global warming potential for methane.

--o0o--

AIR RESOURCES ENGINEER FISCHER: In addition to methane, this proposal also results in statewide emission co-benefits, including 3600 tons per year of VOC reductions and over 100 tons per year of benzene, toluene, ethyl benzene, and xylenes reductions.

Due to the design of the proposed low NOx requirement, we expect an essentially neutral statewide NOx impact with approximately a half-ton-per-year reduction occurring in the San Joaquin Valley compared to current year.

--o0o--

AIR RESOURCES ENGINEER FISCHER: Staff completed a draft environmental analysis, or EA, for the proposed regulation. The draft EA was released for 45-day public comment on June 3rd along with the 45-day package.

Staff will prepare written responses to all comments raising significant environmental issues relating to the draft EA which were submitted during the public comment period. And we will present the final EA and written responses to comments on the draft EA to the Board for consideration in early 2017.

--o0o--

AIR RESOURCES ENGINEER FISCHER: I will now present staff's recommended 15-day changes and next steps.

--o0o--

AIR RESOURCES ENGINEER FISCHER: We are proposing to remove the annual step-down provision in the LDAR portion of the regulation. This recommendation is based on information we received since the release of the 45-day package, including the EPA's removing of a similar step-down provision in its recently finalized new source performance standard rules.

In addition, at our recent methane symposium, more research came to light emphasizing the random nature of super emitter leaks and that more frequent monitoring is indicated. Finally, there have been other leaks at other facilities, not of the magnitude of Aliso Canyon, but which further argue for not stepping down to annual inspections.

We are also recommending 15-day changes to

clarify the underground natural gas storage requirements in response to questions and comments we received from stakeholders.

We are also recommending 15-day changes to perform cost revisions to incorporate idle wells and additional uncontrolled tanks that were not included as part of the original analysis. We also have other minor clarifications and corrections to the regulatory text.

As we continue to work with the Environmental Justice Advisory Committee and other stakeholders, we may also develop and propose additional changes.

--o0o--

AIR RESOURCES ENGINEER FISCHER: Our next steps include continuing working with the districts on resources, NOx, and other implementation concerns. We will also continue to work with the Environmental Justice Advisory Committee and other stakeholders on any remaining issues. We plan to return to the Board in early 2017 to seek final consideration on the adoption of this proposed regulation.

In conclusion, staff recommends approval of the resolution with the direction to address the 15-day changes.

I will now introduce Alan Abbs, Executive Director of the California Air Pollution Control Officers

Association, who would like to say a few words about the ongoing collaboration between ARB and the districts.

CHAIR NICHOLS: Thanks. Welcome.

CAPCOA EXECUTIVE DIRECTOR ABBS: Thank you, Joe.

Good morning, Chairperson Nichols and members of the Board. My name is Alan Abbs and I'm the executive director for the California Air Pollution Control Officers Association, representing the 35 local air districts in California.

Thank you for the opportunity to comment on these regulations. Mr. Fischer and staff did a good job of laying out the need for the regulation as well as the way it would be accomplished. And I'd also like to acknowledge the work of Elizabeth Scheehle and Jim Nyarady for the work that they've done in collaborating with the districts on this regulation.

As the presentation showed, there are opportunities for large emission reductions in the oil and gas sector from the measures proposed: 1.5 million tons of CO2 equivalents, over 3600 tons of VOCs and over 100 tons of toxic air contaminants per year. In addition to the greenhouse gas reductions, the regulation provides local public health benefits, with the reductions in ozone precursors and toxic air contaminants. Overall, we support the regulation and the emission reductions that

would be achieved.

Also, we support greenhouse gas reductions from these measures that are achieved in ways that also reduce criteria and toxic air contaminants.

The implementation of this rule however is going to be challenging, and we look forward to working with staff to translate the regulation into MOUs that define district responsibilities as well as incorporating current district permitting and operational methods and requirements as well as our fiscal requirements.

As staff noted, this regulation will add many new stationary sources, particularly in air districts with nonassociated gas production.

Some districts will be able to incorporate this regulation into their existing rules and regulations and some will have to make some very big changes to their programs. This will require significant investment of time and money to write permits and modify existing permits, purchase equipment, train staff, and then allocate staff for checking compliance at what is going to be a very widely dispersed stationary source, especially when you include idle wells into the regulation and district requirements.

These costs may be difficult for districts to recoup, depending on the number and type of sources and

throughput levels of the local operators.

But as staff correctly noted, local air districts enforce stationary source regulations and we would be the logical choice to enforce this regulation. And so again we look forward to working with staff to work on the implementation aspects of this regulation.

The proposal suggests an effective date of January 1st, 2018, to start. And we think this is reasonable. A regulation isn't any good if it can't be effectively enforced. And ARB and the districts still have some pretty significant work ahead as the proposed regulation moves towards final consideration.

January 2018 gives us the time we need to work through how the implementation would work and the programmatic changes that districts would need to make to meet the requirements of the regulation.

So thank you for the opportunity to speak on this item; and we'll have representatives from some other air districts with oil and gas production to provide further comments.

Thank you.

CHAIR NICHOLS: Okay. Further staff comments?

OIL & GAS AND GREENHOUSE GAS MITIGATION BRANCH CHIEF SCHEEHLE: We're done with the staff presentation.

CHAIR NICHOLS: Oh, okay.

OIL & GAS AND GREENHOUSE GAS MITIGATION BRANCH CHIEF SCHEEHLE: We're ready to answer any questions. Sorry for the --

CHAIR NICHOLS: All right. That's fine. And I wasn't sure if you had other guests you wanted to introduce or additional comments.

Let's just proceed then to take testimony. I was handed page 1 of the list of witnesses who's signed up to speak to us. I believe there's now 32 and counting. So time to get started.

And let's -- just a reminder, the three-minute rule. I have been asked, I'll say at the outset, to have a group presentation at the end. Western States Petroleum Association asked for a combination of four of their people to testify together; and they've asked for extra time to do that. And so I've indicated that they could do -- that they could do that. Just so people are forewarned.

Yes, Senator Florez.

BOARD MEMBER FLOREZ: Thank you, Madam Chair.

Maybe before the testimony, a question for staff on flaring and its impact and trade-offs for NOx. I'm trying to figure out how it -- we have a greenhouse issue but at the same time we have a NOx issue. I wanted to see how that -- how staff looked at that and weighed it out.

OIL & GAS AND GREENHOUSE GAS MITIGATION BRANCH CHIEF SCHEEHLE: Yeah, and this has been a very important part of our regulatory development. So we do -- as Joe pointed out, we do have a tiered approach to addressing any vapor that's collected from tanks. And that prioritizes non-combustion routes or routes that may displace natural gas authority used at the facility. And then if that's not available - because it's not available at all oil facilities or natural gas facilities - then you can use a combustion route such as a flare.

But what we are requiring is for that to meet a low NOx standard. So it would be a low NOx incinerator or some sort of other -- like a microturbine or something like that.

And what that requires is -- in most cases they might have an existing flare. Those flares would actually be changed out to meet that low NOx standards or you're having a reduction from the gas that's already going through that. So overall you actually end up with a reduction overall from the tank measure and from the -- from any incineration that does happen. But we are trying to move people to the non-combustion routes.

Also, as pointed out, there is -- San Joaquin Valley does have a flare minimization plan. And we will be looking at that and following that and determining, if

that does go into place and there's a different scenario to look at, what would be the impacts of that rule compared to that scenario. And then we would mitigate that NOx or work with them on ways to mitigate that.

BOARD MEMBER FLOREZ: Thanks.

CHAIR NICHOLS: Excellent question. Thank you.

Okay. Let's --

BOARD MEMBER EISENHUT: A follow-up --

CHAIR NICHOLS: Yes.

BOARD MEMBER EISENHUT: Just a follow-up on the -- on that measurement and mitigation. I would just request that we -- that you give some attention to periodic reports back to the Board so that we're able to follow -- we're able to follow that and the mitigation.

OIL & GAS AND GREENHOUSE GAS MITIGATION BRANCH CHIEF SCHEEHLE: Yes, I think that we can do that.

CHAIR NICHOLS: Okay. Good.

All right. Now, Morgan Lambert again.

OG-T-1-Lambert

Welcome back.

MR. LAMBERT: Good morning again. Morgan Lambert, Deputy Air Pollution Control Officer with the San Joaquin Valley Air Pollution Control District.

Our Executive Director, Seyed Sadredin, asked me to specifically thank Mr. Corey, who has taken the time to understand the unique circumstances in the Valley and has

taken seriously the concerns that we have had regarding this proposed regulation.

Specifically the potential for NOx from emissions associated with increased oil and gas flaring activity has been a significant concern to us. As you are aware, NOx is a critical pollutant to the District's attainment strategies for both ozone and PM2.5 emissions and, as such, we really have no tolerance for additional NOx emissions in the Valley.

And when looking at the potential for increased NOx emissions, we think it's important both to look at it from a perspective of where we are today as well as potential control measures that are included in upcoming or current State Implementation Plans. And we're appreciative of ARB's recognition of that in the presentation and their willingness to work together with the District.

In addition, flaring activities at oil and gas operations have been an area of great concern within the Valley's disadvantaged communities, something that needs to be taken into consideration. T-1-1

That being said, I would like to express our thanks and gratitude to ARB staff who have worked diligently with the District to address our concerns and to make changes to the regulation where feasible to

address some of those concerns. We are pleased with ARB's commitment in the proposed regulation, which we understand to mean that ARB will work with -- or commit to work with the District to quantify and mitigate any increased NOx emissions which may occur as a result of this regulation in the future. And we at the District are committed to working collaboratively with ARB staff to do so.

Furthermore, the District is committed to working with ARB to ensure the most efficient and effective implementation of this regulation. Towards that end, we are already working with affected stakeholders throughout the Valley to develop a program to implement the regulation locally given the permitting and enforcement infrastructure we already have in place and the expertise that we have in permitting and inspecting oil and gas operations.

Although we are sensitive to some of the issues that stakeholders have raised regarding this proposed regulation, I have come here to express our District's support for the regulation given ARB's commitment in the resolution to quantify and mitigate any NOx impacts in the Valley. T-1-2

And thank you for the opportunity to address your board today on this item.

CHAIR NICHOLS: Thank you very much. As I think

what you're commenting and others have indicated, you know, this is a landmark in terms of the Board's evolution of trying to integrate our ongoing and -- and increasingly, I think, focused air quality efforts into the new greenhouse gas program and making sure that we're really trying to optimize for both of these things. And it's a challenge, but I think it's not impossible. And it looks to me as though things are coming together quite well from an implementation perspective.

Dr. Sherriffs, you wanted to comment?

BOARD MEMBER SHERRIFFS: Well, and I just would want to -- my understanding of how these discussions have gone. In fact, the gap between what the Valley was concerned would be produced in NOx through this, in fact, the staff have worked very hard to figure out ways to close that gap. And we still don't know what the gap will be. But I appreciate very much, and it is absolutely important, that we're committed to measure that, to track it, and think about how we're going to mitigate it if there does come to be an increase in the NOx emissions.

Because again, very timely that we talked about the SIP just before this, the District worked very hard and we're talking 12 tons per day in terms of stationary sources that the District was able to squeeze out. So indeed every ton of NOx is very important. So thank you

for the hard work on that and the ability to adjust this to close that gap and maybe eliminate that gap, but certainly to think about how we're going to mitigate it if it still exists.

BOARD MEMBER SPERLING: Could I ask a clarifying question on something?

CHAIR NICHOLS: Yes, please do.

BOARD MEMBER SPERLING: So this is supposed to be a greenhouse gas regulation, essentially a methane. So I'm unclear why there's so much discussion of NOx emissions. I mean, I understand partly some of the actions might result in NOx. But is that the only reason we're talking about NOx here? Because otherwise there should be a whole separate proceeding and rules dealing with NOx emissions.

OIL & GAS AND GREENHOUSE GAS MITIGATION BRANCH CHIEF SCHEEHLE: Well, we are trying to ensure that any of the greenhouse gas reductions we're getting don't have any impact on criteria pollutants. So that's why we're -- we have this tiered approach. And we've looked at this as just -- if there is any impact from the regulation, we want to make sure we understand that.

BOARD MEMBER SPERLING: But any efforts to reduce NOx -- so it doesn't have anything to do with reducing NOx from venting or whatever other way, right? Am I correct?

OIL & GAS AND GREENHOUSE GAS MITIGATION BRANCH CHIEF SCHEEHLE: Correct.

BOARD MEMBER SPERLING: Okay.

BOARD MEMBER BALMES: I would just say though, one of the things I like about our whole approach to greenhouse gas emissions over the last few years has been to make sure that we also achieve co-benefits with regard to other pollutants. And, again, it's one of the things I like about our work. And so having a separate regulation for air quality issues other than greenhouse gas emissions, I don't even like that idea. I like doing things an integrated way.

(Laughter.)

CHAIR NICHOLS: Well, we are in a Clean Air Act world and we do have to do SIPs for criteria air pollutants.

BOARD MEMBER BALMES: I understand that. But we've been very -- I think this Board should be -- and staff should be lauded for the fact that we've always tried to integrate -- especially when it comes to advanced cars, which Dr. Sperling knows well, we tried -- we try to integrate climate change benefits with public health benefits related to air quality.

CHAIR NICHOLS: It does require that you be able to think in two different time frames and two different

dimensions at the same time, and that is a challenge. But I think we're at least making a good effort at it, yeah.

All right. Thank you.

OG-T-2-Roggenkamp

Ms. Roggenkamp.

MS. ROGGENKAMP: Good morning, Chair Nichols and members of the Air Resources Board. I am Jean Roggenkamp. I'm the deputy executive officer at the Bay Area Air Quality Management District.

I appreciate the opportunity to come before you this morning to testify on behalf of the Bay Area Air District on this important rule this morning.

First off I'd like to express our appreciation for working with Richard Corey and his staff on this important regulation. It has been a very productive process and we appreciate it very much.

We support ARB's proposed rule. The staff has articulated the benefits that would occur in terms of reducing CO2e, VOCs, and toxic air pollutants. And these reductions are really a very important step towards our joint goals of improving public health and protecting the earth. T-2-1

So it will be complementary to the local air district's regulations to reduce VOCs from these kinds of facilities and benefit the communities that are near them.

The robust process that ARB has undertaken for

developing this rule over many years has really been a very productive process. We appreciate all the workshops, the communications, the working groups that they've had with us and other stakeholders.

The Bay Area Air District does intend to incorporate this rule into our local rules, and plans to work cooperatively with ARB on implementation and enforcement. We will work with ARB and other stakeholders and other air districts on the implementation issues that have been articulated.

The rule does provide flexibility for air districts to be more stringent, and this is something that we at the Bay Area Air District will explore. Many of the facilities in our area are smaller than the facilities that would be regulated under the Air Resources Board rule, and we will explore whether to include them in our rule.

We look forward to working with ARB on this rule and other important climate protection and air quality benefit rules.

Thank you so much.

CHAIR NICHOLS: Thank you.

Mr. Greene.

OG-T-3-Greene

MR. GREENE: Chair Nichols, members of the Air Resources Board. I'm Larry Greene, the Director of the

Sacramento Metropolitan Air Quality Management District. We too would like to commend the ARB staff, Richard. And all the work that we've done on this, it's been a long effort - and we're not finished - but we've made a huge amount of progress and I think it's been a very cooperative effort amongst all of us.

We support this regulation and we think the timeline that's been laid out by the staff is a reasonable timeline. We anticipate, like Bay Area, incorporating this regulation within our regulations and permitted sources, so we think we will be able to implement this. T-3-1

We do recognize that some of the smaller districts and some districts that won't be able to do that as easily have some issues regarding fees and support -- and paying for the regulatory effort, and we appreciate ARB's willingness to go ahead and continue discussing that particular issue.

Also, idle wells remain -- continues to be an issue that we're interested in. There's a lot of them, and finding them out on -- up in Northern California is not the easiest thing and it requires a lot of work. So -- but we both know that and we're going to continue to work. T-3-2

We support CAPCOA's comments, and we again appreciate this collaborative effort moving forward and

we'll be participating fully in that.

Thank you.

OG-T-4-Tobias

CHAIR NICHOLS: Thank you.

MR. TOBIAS: Good morning, ladies and gentlemen. My name is Elias Tobias. I'm here on behalf of EDF. And I'm the founder, CEO, and lead engineer for Safety Scan U.S.A.

We are the specialist invited here. We do optical gas imaging leak detection, or infrared as it was called on the suggested technology after Aliso Canyon by the Emergency Proclamation. So we do just that. We detect leaks using that technology, we quantify the leaks, and we help emissions management for LDAR and the greenhouse gases.

I found that recently Colorado University and Carnegie Mellon University done a study on the ground 5,000 locations -- gas locations throughout the U.S. and numbers of data last year. They found that the facilities lose around 100 billion cubic feet a year of gas. That's serious stuff. And 30 percent of that hundred billion are vented, are intentional vented gas. The rest is like fugitive emissions. Being the big leakers, compressor stations, transmission and storage, and underground pipelines.

The optical gas imaging technology is very

T-4-1 (B-12-1)

accessible. I have the equipment here if somebody wants to see it on the break. It detects leaks at a very early stage. A good example I give is -- I always bring a cigarette lighter with a camera. When I press the button of the -- just the gas part, the camera's able to pick up that small of a leak. Its 3 grams per hour or 0.1 ounces per hour. So it picks up at the very early stage. So the earlier we pick the leak, it's easier to mitigate or to fix and avoid shutdowns and things like that. T-4-1 cont. (B-12-1)

So it's very important that the technology was a suggested technology on the Emergency Proclamation after Aliso Canyon.

I was here in January and I took -- from a three-mile distance I took a few videos from the leak while it was happening. And the first time I turned the camera on and I look at the image, I thought something was wrong with the setup, so serious it was, so big it was. So it was a serious unfortunate event that obviously is teaching us how to prevent it. And from my studies, it's probably one of the most serious events of that nature in the history of our planet.

So, yeah, I feel honored to be here to help a little bit and how we can help, you know, move forward to a better future on that respect.

Being a gas industry, or natural gas, leaks is

going to occur. You know, nature is unpredictable. So it's kind of a utopia to think we're going to have zero. But we can -- we can actually work towards finding it at the early stages.

And places --

CHAIR NICHOLS: That's the buzzer for your three minutes. I'm sorry.

MR. TOBIAS: Well, all right. Well, I appreciate very much the opportunity, and have a good day.

CHAIR NICHOLS: And we do have your written comments also. So thank you.

Elizabeth Paranhus.

OG-T-5-Paranhus

Hi.

MS. PARANHUS: Thank you. My name is elizabeth Paranhus. I'm an attorney for EDF. I wish to thank the Board for providing us an opportunity to comment on this landmark rule and urge the Board to adopt it.

EDF has participated in the development of clean air measures to reduce methane and other natural gas emissions from oil and gas facilities at both the federal and the state level.

We participated in the development of the first ever rules to regulate methane from oil and gas facilities in Colorado in 2014. The proposal before the Board today surpasses that rule in terms of the scope and the

comprehensiveness and the rigor of the requirements.

We commend staff on working with a broad range of stakeholders to propose cost-effective and feasible requirements. These requirements are critical to ensuring that ARB meets legislative and gubernatorial objectives aimed at reducing statewide methane emissions and achieving other co-benefits as discussed.

ARB should not delay in adopting these requirements and it should not weaken in any way to proposed requirements. In particular, we strongly urge the Board to retain the quarterly monitoring provisions for well sites, compressor stations, and gas processing facilities; and the daily and continuous monitoring provisions for underground natural gas storage facilities, with no provision that allows for a reduction in inspection frequency to annual. T-5-1

We commend the staff on proposing the removal of the, quote, step-down provision and urge ARB to approve of this removal. As the catastrophic leak at Aliso Canyon and recent leak at McDonald island demonstrate, leaks can and do pop up unexpectedly, and if not detected and remediated immediately, can cause significant harm to public health and the environment. T-5-2

Moreover, as ARB has demonstrated, quarterly monitoring is highly cost effective. Indeed, per our T-5-3

comments, we believe ARB's cost estimates are conservative and quarterly instrument-based monitoring can be achieved at a lower cost than ARB suggests. T-5-3 cont.

While we strongly support the rule before today, there is room for improvement. In particular, we urge ARB to phase out or prohibit venting from intermittent bleed controllers. We believe the data demonstrates there are a significant number of these devices in the state, and if the emissions are left unaddressed other than by just the LDAR provision, it -- the significant methane emissions from those will undercut some of the other reductions achieved by the rule. T-5-4

Lastly, going forward, new information or emissions identify -- or identified regulatory gaps may surface, necessitating further analysis or review. For example, in 2014 a near-surface waste gas line at an oil and gas line at an Oil and gas facility in Arvin, California, leaked for nearly eight months. And reports indicate that little, if any, requirements existed for inspection and maintenance of those kinds of gas lines. T-5-5

As ARB moves forward with this oil and gas rule, pollution instances should be thoroughly reviewed and revised.

Thank you very much. Really appreciate the time.

CHAIR NICHOLS: Thanks.

OG-T-6-Benson

MS. BENSON: Hi. My is Elly Benson and I'm an attorney for the Sierra Club, which have over 145,000 members in California. And in recent weeks over 7,000 of our members and supporters have signed on in support of the proposed rule, and urging the Board to improve this -- certain provisions and implement the rule as soon as possible. T-6-1

First I'd like to submit a disc which contains the exhibits contained in the joint comment letter that we submitted with other groups on Monday, and an updated version of our letter that has those exhibit numbers in it.

I'd like to start by thanking the Board for proposing a rule that contains cost-effective, technically feasible mechanisms that will reduce the release of harmful methane emissions from a broad suite of new and existing oil and gas facilities.

Methane is 87 times more powerful than carbon dioxide over a 25-year frame. And as the Board is aware, significant methane directions are necessary for California to reach its greenhouse gas emission reduction goals.

The draft regulation will also achieve co-benefit reductions in volatile organic compounds and air toxics that threaten human health, as has been discussed.

My timer doesn't look like it's going up here, just FYI.

We commend the Board for proposing this rule and urge the Board to adopt it.

There are several provisions that we urge the Board to strengthen before finalizing the rule. These provisions and suggestions for making them more robust are explained in detail in the comment letter that I mentioned earlier. Today I'd like to briefly touch upon three of them.

First, leak detection and repair. Given the geographic and temporal unpredictability of leaking equipment, one of the most important aspects of an LDAR program is the frequency of inspections. Studies strongly support at least quarterly inspections using modern leak detection technology to identify leaking equipment.

We strongly support the staff's suggested modification to remove this step-down provision, because neither the percent nor number of leaking components is an accurate predictor of a facility's emissions performance. We thus urge the Board to finalize a quarterly inspection requirement and to remove the provisions that allow for operators to reduce inspection frequency to an annual basis.

T-6-2 (OP-19-8 and OP-19-11)

We further urge the Board to lower the leak --

T-6-3 (OP-19-4)

initial leak threshold to 500 parts per million. T-6-3 (OP-19-4)

Our second, compressor emissions. We support the Board's approach to control emissions from compressors, both in the production and non-production segments, through either vapor collection systems or through requirements to measure emissions of the vent point, and to repair when those emissions exceed thresholds.

We urge the Board to reduce the flow-rate threshold that triggers repair or replacement of rod packing or seals. Currently the threshold for repair is much too high, as detailed in our written comment. A standard set in the 0.4 to 0.5 standard cubic feet per minute range would be cost effective and would more appropriately balance the need to reduce some of those emissions and the social costs of those emissions while keeping costs reasonable. T-6-4 (OP-19-4)

Lastly, pneumatic equipment, which Elizabeth from EDF just covered pretty well and I'm running out of time. So I think instead I will just say thank you for your propose and for the opportunity to comment today.

Thanks.

CHAIR NICHOLS: Thanks. OG-T-7-Mann

MR. MANN: Chairperson Nichols, Board members, staff of ARB, concerned citizens. My name's John Mann. I'm with the 360-International M^2. And this is Charles

Mann with Charles Mann Company, a distributor of mine on the West Coast.

We're here -- or we support your regulations. We agree with your reductions. We think it's a great -- great address. And we've worked there for the last three years with the EPA making several petitions for reconsideration with reduction, trying to address their reductions for emissions and VOCs. And after those three years they directed us to the California Air Board regulations, said that they're more progressive, they're aggressive, and they actually direct them and they monitor them. And so that they're the people who actually help them. They monitor them. They help them to direct -- the direction that they're going to go and the way they move the country. And they set -- they actually set -- help them set the regulations. T-7-1

So that's why we're here today. Joe Fischer's been very helpful to help us do that.

We actually came today to show you a product that we're actually using and we've had for last five years. That is a packing leak detector. It actually -- is the device that actually monitors 24 hours a day. Very cost effective, very inexpensive for the operators to use. And it actually measures and actually detects the leakage of the packing on compressors. Any reciprocating compressor, T-7-2 (B-1-2)

no matter how large, no matter how big, for gathering midstream or upstream.

And it can be monitored 24 hours a day. Not just one time. And you don't have to worry about whether the packing starts failing at that point.

So we have the material here. We also have brochures and we are on line.

While I do understand the operators' concern and the cost, and I do understand their frustration. What they're trying to do is focus on what they really have to do. What we're trying to do is help focus that direction and get direct from California Board to see if we can help them focus that direction and make all those things come together so we can help them focus their costs, so we can help lower the reduction of the methanes, the VOCs, and make it all one package.

So we thank you for your time. We thank for your efforts. And we hope that we can move forward and help you to achieve your goals.

Thank you.

OG-T-8-
Derohanian

CHAIR NICHOLS: Thank you.

MS. DEROHANIAN: Good morning. My name is Cheri Derohanian. I happen to work at Auto Club. But that was just my business card where I work full time. I'm actually a member of the Porter Ranch Neighborhood

Council. But I speak to you today as a parent and a resident of Porter Ranch.

I have a personal story that how it affected my family and my community. I have two daughters that attend Porter Ranch Community School. During the first week after a gas blowout, they were running the mile and nobody even knew about this gas leak. So notification systems from the gas company or any other companies where there's a leak detected is first and foremost.

Then it took about two months for the school district to decide, "Oh, we'll close the schools." So the school my daughters attend, there's 1100 students and Castlebay, an elementary school, there were 800 students. So 1900 students had to relocate, and the schools were moved and it was very, very inconvenient.

In addition, out of the 30,000 residents reside in Porter Ranch, approximately 15,000 relocated their households. That's not only stressful, it's awful, it's an inconvenience. Loss of personal liberty and happiness and our way of life was taken away for four months over the holidays, Thanksgiving, Christmas, my kids' birthday. They couldn't even have a decent party because all the kids were dropping out of school like flies.

So the stress of the uncertainty of a four-month gas blowout catastrophe is unacceptable. This is bad for

public health. This is bad for our air, our climate, everything.

And what we seek is that you strengthen the rule and do not allow that step-down that could possibly go to a year. Three months of rigorous testing is necessary and it must be implemented. Any kind of lax rules, lax testing, lax any of the above is unacceptable. This is not only true for the Aliso Canyon, for Porter Ranch and surrounding communities, but for our state and our country. We must maintain public health. We must allow residents of all these areas to enjoy their clean air and their way of life. Again the four months of stress and uncertainty was unacceptable and this silent catastrophe is just horrific. T-8-1

So I again thank the Chair and the entire Board for considering this and for listening to my story.

CHAIR NICHOLS: Thank you. We will make sure that you're not listed as representing the Auto Club of Southern California.

MS. DEROHANIAN: Just resident. OG-T-9-Carmichael

CHAIR NICHOLS: Okay. Thank you.

MR. CARMICHAEL: Good morning, Chair Nichols, members of the Board. Tim Carmichael with Southern California Gas Company.

First of all, let me say we have been working

with the staff for more than a year on this proposal. We support the objectives laid out by the staff. And we've submitted extensive comments on details, identifying several concerns with the details, and we're going to highlight four of those.

I'm joined today by one of my colleagues, she's a technical expert in this area, Karen McInnis, and she'll speak next.

But we want to highlight four areas of concern and request that the Board direct the staff to spend more time on each of these with the affected industries to work through some of these details.

Those areas are:

The storage monitoring proposal, which, as we identified in our comments, was only really fleshed out in the most recent version of the proposal. And there has not been adequate time to engage the staff on the details, and we request more time on that. T-9-1 (OP-17-6)

Technical and process feasibility concerns, cost estimates. The -- karen will provide more details on this. But our cost analysis actually found costs three and a half to four times what you see in the staff proposal. So not a small difference but a very significant difference. And that's fleshed out in our comments, but Karen will speak to that a little bit more. T-9-2 (OP-17-7)

And then I think the staff did a good job of noting the multiple layers of regulation, the number of agencies engaged in this area, either today or in the process of developing regulations, from the local air districts to the PUC, the Department of Oil and Gas. And our request is a direction from the Board to the staff to take the time to ensure that there's strong coordination between all of those agencies so we're not having multiple regulations that don't add additional benefit but may add significant cost without additional benefit.

T-9-3 (OP-17 -10)

I think -- oh, the staff 15-day changes noted that they were going to take time to work on clarifications on the storage monitoring provisions. We respectfully believe that it's more than clarifications that are needed. And we would like Board to direct the staff to work with our industry on that segment in particular.

T-9-4

OG-T-10-McInnis

Thank you very much.

MS. McINNIS: Good morning. My name is Karen McInnis, and I'm here representing Southern California Gas Company, as Tim, my colleague, stated.

So the first item I wanted to speak to you on is regarding the economic analysis that was published with this last draft on May 31st. And we performed an extensive comparison between that analysis and did our

own, and what we found is, first of all, there were some calculation errors, just simple mathematical calculation errors in the published analysis. And then we found, just to read some numbers, that 9 million versus $36 million for the economic analysis CARB prepared for the LDAR portion of the rule - this is only for the leak detection and repair portion, one segment of the rule. So it's almost four times what CARB stated versus what we believe the costs truly would be.

T-10-1 (OP-17 -19)

T-10-2 (OP-17 -27)

So we recommend that staff is directed to go back and prepare a more complete analysis, more comprehensive, especially because as a public utility, we have to go towards the CPUC for our rate case authority, and this would be a reference document.

The second item is regarding process feasibility. And as a utility, we are required to provide service. And so system availability and reliability are a major concern. And we believe that the way that the language is currently proposed, that even though there is a critical component definition and a repair delay provision, it does not accurately or adequately meet our needs to ensure that our system will not be impacted by the repair timelines as represented in the rule.

T-10-3 (OP-17 -59)

We want to ensure that we can serve our customers reliably safely, and so we once again direct -- or ask

that you can provide direction to staff to work with us. We definitely would be pleased to work with modifying the language to meet both of our needs.

There are other rules in existence which have repair delays that can be referenced. EPA's Quad O(a), Colorado's regulation has some repair delays, as well as some local air districts.

So we believe a successful solution can be reached.

T-10-3 cont. (OP-17-59)

And my final comment is regarding the technical aspects of the rule. There are several monitoring and screening detection devices that are referenced within the rule, and we believe that in the storage monitoring area that the technology as represented is not -- has not been proven to meet and address what's been requested. So we ask that that be looked at as well.

T-10-4 cont. (OP-17-3)

And I'm out of time, so thank you.

OG-T-11-Begtsson

CHAIR NICHOLS: Thanks.

MR. BEGTSSON: Good morning, Chair Nichols and members of the Board. I'm Nathan Begtsson here to represent Pacific Gas and Electric Company today.

PG&E is strongly committed to providing safe, affordable, and reliable natural gas to our 15 million customers. And on that note, I just want to say that we agree with SCG's economic analysis. Anytime that an

T-11-1

analysis like that is performed, we worry about the cost impacts to our customers. T-11-1 cont.

The second note I have today is a process note also related to the storage requirements. As Director Corey noted earlier, the other requirements in this rule have been under consideration for two years, if not more. And the new storage requirements were added in on the May 31st version of this document, and I think they're important enough to warrant a little more time and discussion with staff. So we ask you to direct staff to do that. T-11-2 (B-10 -2)

And my final point today regards the concept of the regulation itself. As you just heard from Karen, there are critical component exemptions in the current regulation, and PG&E strongly supports those because it's critical to the safe and reliable operation of the natural gas system. However, not every component that's going to leak will be a critical component. And the way the rule is structured with the aggressive repair timelines, there may be cases where blowdowns are required; and that would result in greater emissions even than leaving the leak be for even a fairly long period of time. T-11-3 (B-10 -5)

And so what this is really about is PG&E does support the goals of this regulation and believes that the natural gas system can perform in a more

environmentally -- have higher environmental performance and lower emission. It's about structuring enough flexibility in the rule to allow an operator to bundle repairs, to delay repairs when it makes sense in order to avoid the kinds of emissions that would be associated with blowdowns.

So as it stands, the repair requirements are very thorough, they're very fast. What we're asking for is the kind of delay provisions that would provide the kind of flexibility to make sure this regulation can reach its ultimate goal, which is emissions reductions.

T-11-4 (B-10 -4)

And I want to thank staff for their openness to working with us so far. It's just sort of a challenging question because there are so many different kinds of components, it's a complex system, and that one-size-fits-all sort of -- this amount of time for this kind of leak is not necessarily the right answer.

So we look forward to and hope to continue working with them on this, and we're working very hard to come up with language that would make sense.

The final thing is: The Method 21 U.S. EPA reference measurement system, which is concentration-based, which is the sort of baseline for this rule because its's the measurements upon which the repair timelines are driven, there has been demonstrated

T-11-5 (B-10 -4)

that there is a fairly low correlation between the concentration measurements and actual leak rates, and this is something we'd like the Board to direct staff to take into account going forward in the future. We realize it's important for now and cannot be changed, but volume-based measurement probably is the right way to go about this in the future.

T-11-5 cont. (B-10 -4)

Thank you.

CHAIR NICHOLS: Okay.

OG-T-12-Rivera

MR. RIVERA: Good morning, Board members and staff. My name is Willie Rivera. I'm here on behalf of the California Independent Petroleum Association, CIPA. CIPA represents nearly 500 independent crude oil and natural gas companies as well as service and supply companies operating throughout California. So I'm here in the Sacramento area.

Our association's goals include highlighting the economic contributions of our members, fostering the efficient utilization of California's petroleum resources, and striking a balanced approach between environmental protection and resource development.

You should have received a letter earlier today. I just wanted to highlight a few items from that letter. I have some of my members here in the audience as well who will speak more specifically on some items of concern to

our members.

Our letter focused on four main sections, four categories related to the implementation and enforcement of the rule before you, mandatory reporting inconsistencies, the need for reasonable standards. And there are some specific technical concerns related to vapor control and flaring that you'll hear about as well from some of our members.

You know, I think this part is clear, and we get it and I understand it. The ARB's wish to have this implemented at the local level I think is the best thing. It's the most efficient use of resources, and they know their areas better than anyone else. However, you know, we believe there's little clarity issues on that front how that will work, how it will be enforced. You know, we believe it's critical that it be made clear who that lead regulatory body is going to be. You know, right now I think there's a possibility for double jeopardy; there's a possibility for two agencies to be enforcing the same rule, which I think adds undue burdens to our industry, and certainly deviates from regulations you folks have considered and passed in the past. T-12-1 (B-4-2)

I think there's a lot of work that can be done to better incorporate local priorities and incorporate local control. I think in the process of developing MO --

memorandums with the local air districts, I think that process needs to be public. I think stakeholders should be a part of that process. We should be at the table. And that has happened. Your staff has done a great job. We appreciated the fact they came down to Bakersfield and joined stakeholders for a day to answer our questions and learn from our industry and hear our concerns. And we hope that that continues in this 15-day package you folks will consider. We look forward to working with you through that process.

T-12-1 cont. (B-4 -2)

And thank you for your efforts up and to this point.

OG-T-13-Lovely

MR. LOVLEY: Good morning. My name's Tim Lovley. I'm with MacPherson Oil. And I was really happy to hear that we're at harmonization today, because I think that's important for us when we're looking at the different agencies, the different people that are engaged in this process, the different shareholders. When we get to this regulation when it actually hits the ground, that harmonization is going to be important to us for lack of reducing duplication, the issue of having multiple or different types of testing requirements to be done such as a flash analysis.

T-13-1

Additionally, I've got a couple other items here that I wanted to talk about real quick.

The gauge tanks were recently added. These are tanks that are hundred barrels, they're portable. Some are stationary. These are used for measuring one well at a time. These are very low emission especially in the heavy oil fields. And I think there's more opportunities to discuss this with the staff when the outgoing discussions we've had. T-13-2

Additionally, the timeline, the 180 days, seems unrealistic. If you go through the permitting process, you have the engineering process, the study process, before you even get to a permitting process. Then somewhere along the line you actually get to spec out and order your materials. That timeline is very short. You're looking at -- what we try to do is plan out a year ahead. If we have an issue that we've got to make a quick response to, we need more than 180 days to respond. T-13-3

Additionally, the downtime issue. We run like most businesses, try to keep our inventory spares to critical parts. If we have compressors in our facilities that go down, 30 days is sometimes too short. Some of these equipment require specialized parts, especially when you start talking about mechanical seals that takes significant amount of time to put together especially if they're designed for a specific compressor. These are something that manufacturers don't even have on the shelf. T-13-4

Additionally when you talk about compressors, I think there's a difference in the opportunity to harmonize the regulation for the specific portion of the industry for this. To understand the difference between production where our compressors may run at different rates, low flow, high flow, the gas use for the filtration is much different than it is in the PUC gas system. And it has a much higher failure rate when you look at dry seals in the compressors.

Finally, the casing vapor was a recent addition. I think there's more opportunities there to discuss with staff how the casing vapor actually works; where you see casing vapor; when it's not there; how it's affected by the difference within the reservoir, the pump, the pump stroke - a lot of activities there - the pressure, so that they can understand that. T-13-5

Again, I think there's a lot of opportunities to harmonize a regulation for the specific industry along with the different regulatory bodies.

Thank you. OG-T-14-Horne

MR. HORNE: Good morning, Chair Nichols and the Board. Man, is this imposing or what. I'm just first time doing this, so I appreciate the opportunity to speak with you.

My name is Randy Horne, and I represent NAFTEX

Operating Company. We're a small producer for oil and gas in the Bakersfield area.

Thanks to staff for what they've done so far, working with us as industry.

What I'd like to talk about is that I agree with many of the comments that have been made previously with the speakers with LDAR. We're a small operator. We were 24-people strong last year. We're now down to eight people. And we're trying to operate and, trust me, we are environmentalists as we operate. But this LDAR requirement, particularly with the step-down provision proposed, could impact us on the heavy oil side. That would almost be 300 percent increase in cost to us. So we ask that staff continue working with us with regards to reviewing that step-down provision, as well as looking at some of the other requirements noted earlier in the presentation. T-14-1

And, Joe, thank you very much. That was really a nice presentation.

As we continue through this effort, our industry as Willie has indicated, looks forward to working with you, continuing to improve it, and try to minimize the duplicative regulations that we are working through at these points. T-14-2

So I appreciate again for the opportunity.

Apologize for the nervousness. But we look forward to working with you again, staff.

CHAIR NICHOLS: It wasn't so bad, was it, really.

(Laughter.)

OG-T-15-Baizel

CHAIR NICHOLS: You did fine. Thank you.

MR. BAIZEL: Chair Nichols, Board. My name is Bruce Baizel. I'm the energy program director for Earthworks. We're a national nonprofit that works with communities to mitigate the impacts of energy development and mineral development. And we've submitted written comments, which you'll see.

What I'd like to do is focus a little bit on the unique niche that we occupy. In the NGO world we're one of the few that actually has the gas imaging technology. And so for a number of years now we've been working with communities, including some here in California, to look at oil and gas sites, looking for emissions using that technology.

I would say that in addition to California we worked in 12 other states, looked at several hundred sites; and regardless of the state of the operator or, in general, the type of facility, we find that at three-quarters of the sites we look at there are unplanned methane emission leaks.

So it's not that any particular operator or any

particular state is different. We find it's pretty consistent across those states.

Specific to California we've looked at well sites; we've looked at gas processing plants; we've looked at your operation waste pits; we've looked at storage fields, including some of the images on Aliso Canyon are from our thermographers. We don't -- we don't see a difference between those facilities really. It's pretty consistent.

We're very pleased that you in fact are stepping out -- we were a party in the Colorado 2014 methane rulemaking on oil and gas. We're pleased that you're stepping out with both existing and new sources. We think that's very significant. For the people that we work with, it's the sources that are there right now that are the problem, and your rule would address that. T-15-1 (B-2-1)

I think the other comment I would make in terms of our experience, we've done work down in the L.A. Basin as well and urban settings. And a couple of the images that we submitted, we did one from Kern County, the Lost Hills Oil Field, and then one from the Murphy oil field; and in both cases, whether it's a large site or a small site, you can still see those emissions coming off. One's from a vent, the other was from storage tanks. So we really encourage you to continue on.

We saw on the 15-day change the removal of the step-down provision. In our experience, over time, we would encourage you to take that out. It doesn't really -- we don't see that it will provide the incentive to actually find leaks. We, in fact, think it will provide a perverse incentive to not find leaks. So we encourage staff -- you to take that recommendation. T-15-1 (B-2 -14)

Thank you.

CHAIR NICHOLS: I'm going to prolong time for just a second. Because I did read your written testimony, and I wasn't sure what you were proposing when you talked about citizen science, in addition to your comments about transparency and making information available and so forth.

Did you have some additional idea about how that would work?

MR. BAIZEL: Well, there's suggestion in the regulation that there would be a web portal for reporting information. And as part of that, we presume there would be submission by operators when they do -- when they bring in a paid contractor, which many of them do in other places, to the leak detection reports. We think you should also allow for certified operators with OGI to actually submit directly in. And we've done that with partner community groups with some of the air districts

here in California. But as long as you meet the requirements for certification and recordkeeping and so on, we think you could tweak the rule to allow for submission of that when you have a certified operator.

CHAIR NICHOLS: I see. Okay.

MR. BAIZEL: That would be our suggestion.

CHAIR NICHOLS: Yeah. I appreciate that. Thank you.

MS. HERRERA: Gloria Herrera. I'm here today to support the developing proposed regulation.

CHAIR NICHOLS: Could you move the microphone closer.

Thank you.

OG-T-16-Herrera

MS. HERRERA: I'm Gloria Herrera. I'm here today to support the developing proposed regulations. As resident of Kern County, our health and well-being has to be over any industry. There is so many respiratory problems, asthma problems, cancer problems due to all these contaminants.

T-16-1

I will appreciate that you listen to our petitions. Thank you. Have a nice day.

OG-T-17-Trujillo

MS. TRUJILLO (through interpreter): Good morning, everyone. My name is Felipa Trujillo, and I would like to -- I'm part -- I'm a member of the community of Shafter where I feel that the air is most contaminated.

T-17-1

I am petitioning to stop fracking, please, because we do have some cancer and asthma issues. T-17-1 cont.

And I also support solar energy.

Thank you very much to all.

CHAIR NICHOLS: Thank you. I wish we had simultaneous translation, but we don't. So please ask if people can pause.

Thank you. OG-T-18-Flores

MR. FLORES: Good morning to all the Board members. My name is Juan Flores. I'm a resident of deny Kern County, Delano as a matter of fact. And today will be a landmark date once you guys approve these new regulations.

For many decades, residents of Kern County have stand in front of this Board and many other boards asking to protect their well-being and their health. What the residents prior to me just mentioned, it's completely truth. It's so sad to go to these communities and that your children say, "I already know the steps that I have to take when I have an asthma attack. I know that I need to relax first and then I need to wait for an ambulance and go to the emergency room." And this is all because of the poor air quality that we have.

And it is also a landmark today that the oil industry will accept that they have responsibility -- and T-18-1

the gas industry as well -- that they have responsibility over these burdens that are affecting the health of our community members. It was about time.

In Kern County at least we have been doing oil drilling for 117 years. And today would be the first day that we're going to regulate and maintain emissions coming from this industry. Long overdue. Long overdue.

Today I'll be happy to go back to my community and to finally speak to community members and say, "We don't have excuses anymore. Now we have a clear plan to come and help and protect your health."

T-18-1 cont.

Thank you so much.

OG-T-19-Stano

MS. STANO: Good morning and thank you. My name is Madeline Stano and I'm an attorney with the Center on Race, Poverty, and the Environment in Delano, California.

I'm offering public comment on behalf of our clients, some of whom you just heard from; in addition, residents from Bakersfield, Arvin, Delano, Shafter, Wasco, and Lamont in Kern County.

We offer our support for this essential rule to protect some of our state's most overburdened residents from life-threatening pollution, overwhelmingly residents where low income and residents of color; as the Chair stated earlier, in disadvantaged communities.

T-19-1 (OP-11-1, OP-15-1)

We support the removal of the step-down provision

T-19-2 (OP-11-2, OP-15-7)

as stated in the proposed 15-day changes.

Additionally, we respectfully request that CARB release an annual report to the legislature with aggregate emissions data from owners and operators collected under this rule and data from CalEnviroScreen for the purposes of prioritizing inspection and enforcement of this rule in the areas most overburdened by pollution in the state.

T-19-2 (OP-11-2, OP-15-7)

T-19-3 (OP-15-13)

Thank you very much.

OG-T-20-Decena

MS. DECENA: Good morning, members of the Board. My name is Vinai Decena. I'm a registered nurse and a public health nurse, and I'm representing the Alliance of Nurses for Healthy Environment, any of the national organization comprised of nurses who are concerned about health issues that are related to environmental exposures.

We are engaged in nursing education, practice, research, and advocacy. Our members include hospital-based nurses, school nurses, public health nurses, occupational nurses and academic nurses.

California already experiences the worst air quality in the nation, with more than 95 percent living in areas with unhealthy air, according to the California Air Resources Board. Currently approximately one out of every three days is considered unhealthy for ozone population. This is based on California's own health-based air quality standards in areas such as the South Coast Air Basin and

the San Joaquin Valley.

Also according to the California Air Resources Board, the annual health impacts of exceeding state health-based standards for ozone and particulate matter already includes 6,500 premature deaths, 4,000 hospital admissions for respiratory disease, 3,000 hospital admissions for cardiovascular disease, 350,000 asthma attacks, 2,000 asthma-related emergency room visits, elevated school absences due to respiratory conditions including asthma, reduced lung functions growth rates in children.

Leaking methane gas is yet another contributor to our already challenging air quality. In combination with other pollutants, methane causes ground-level ozone, which is associated with the inflammation of the lungs and exacerbation of asthma conditions in children and adults.

Patients exposed to methanes have reported incidents of dizziness, fainting, headaches, fatigue, numbness in the limbs, muscle tremors, memory loss, and irritability. Some other generalized symptoms are hearing loss, sleep disturbance, nose bleeds, increased blood pressure and decreased mental performances.

As nurses, we see panicking parents as they bring their children to the emergency room in asthma crisis. We see frail elderly people whose lungs have been ravaged by

years of breathing bad air.

We must take all the precautions possible to reduce the conditions that causes ground-level ozone that contribute to these lung conditions.

Methane is also an extremely powerful greenhouse gas that contributes to global warming and climate change. We are already seeing many of the health impacts of climate change, and it is critical that we mitigate any and all contributors to public health crisis.

In California, we must have the strongest methane standard possible. It must include tight schedules for regular inspections. Given the aging gas and oil infrastructure in California, we urge the Board to remove the step-down.

T-20-1 (OP-11-2, OP-15-7)

We need -- thank you.

OG-T-21-Schroeder

CHAIR NICHOLS: We do have your written testimony also. It's quite extensive. So thank you.

Okay. We're on to page 2.

MS. SCHROEDER: Hi. Good morning. My name is Jaclyn Schroeder and I'm here with Moms Clean Air Force. I'm here just as a concerned parent.

When I was first invited to come today, I almost quickly declined because I have three young children at home. But that's exactly the reason I decided to come, because I am their mother first.

So being a mother first to me is being that voice for my children. Being a mother first is making sure I provide a healthy environment for them. I am a mother first today by speaking up for my children's health.

So thank you for taking this important step in addressing the methane pollution from oil and gas operations. And I urge you to move forward with your proposal while considering two important changes.

One, remove the step-down provision which would allow operators to shift to less rigorous monitoring requirements. This would create a perverse incentive to avoid finding and reporting leaks and less of a reason to avoid fixing them quickly. T-21-1 (B-5-1)

Second, the current proposal pushes implementation timeline by a year, from January 2017 to January 2018. Our families can't afford to wait till 2018. T-21-2 (B-5-2)

I currently own a home in Porter Ranch, where the Aliso Canyon gas blowout was. I have again three kids, a son who's five-years old and twin daughters that are two and a half. My family, community, and I understand the direct impacts of methane pollution, especially the exposure to co-pollutants that leak alongside methane pollution from oil and gas development.

I grew up in the San Fernando Valley in Porter

Ranch and decided to raise my family there as well. However, never did I realize that we lived on top of one of the largest gas storage reserves in the United States that was not regulated properly, and what that could mean for the health of my family.

October 23rd in Porter Ranch the largest methane gas blowout in U.S. history was reported. Ironically a month earlier my daughter Emma, 22 months at the time, was sent home from Kaiser with a nebulizer with -- that's an at-home breathing treatment. She began showing signs of asthma and continued to show these signs over the next few months.

October 31st, Halloween, unbeknownst to us the leak had been reported a week earlier. My children that evening were sniffling, complaining of headaches and fatigue. There was an odd odor in the air, and my kids barely lasted 30 minutes trick-or-treating.

November 5th we took our daughters to Kaiser again because they were having trouble breathing. Just days later, my daughter Grace developed really bad eczema on her cheeks.

December 10th, my girls were back at Kaiser and diagnosed with asthma with acute exacerbation. These are real impacts of oil and gas development and the hazards that can come from the co-pollutants leaked alongside

methane pollution. Our most vulnerable chil -- are little lungs and bodies.

I just encourage you to strengthen the proposed rule.

Thank you very much.

OG-T-22-Russell

CHAIR NICHOLS: Thank you.

MS. RUSSELL: Good morning. I'm Loni Russell. I'm here today as a concerned citizen, a daughter, and an aunt. I'm a member and community organizer for Moms Clean Air Force, California, a community of over 80,000 California parents fighting for clean air. And on behalf of our members, I want to thank you for the opportunity to testify today.

I thank you for taking this important step and addressing methane pollution from oil and gas, and respectfully urge you to move forward with your proposal, while considering two important changes:

One, the current proposal includes a step-down provision which would allow operators to shift to less rigorous monitoring requirements, which would create a perverse incentive to avoid finding and reporting leaks and a reason to avoid fixing them quickly. T-22-1 (B-6-1)

And, two, the current proposal pushes the implementation timeline by a year, from 2017 to 2018. Our communities cannot afford to wait. T-22-2 (B-6-2)

The scientific record and public health co-benefits demonstrate that cutting methane pollution would provide strong public health protections for Californians and, most importantly, for our children. I'm no stranger to poor air quality, growing up in the San Fernando Valley, where my family still resides and many of my relatives still suffer from asthma. T-22-3 (B-6-3)

Nearly one in every 10 school children in the U.S. has asthma, asthma being the number one health issue that causes kids to miss school.

Co-pollutants that leak along with methane lead to ozone formation or smog. Numerous studies have found elevated smog in regions with oil and gas development largely due to emissions of VOCs and the nitrogen oxides from these activities. T-22-4 (B-6-4)

Standards that reduce methane emissions from oil and gas development will simultaneously reduce emissions and formation of health-damaging air pollutants, including VOCs, hazardous air pollutants, particulate matter and ozone. T-22-5 (B-6-5)

So reducing all these would reduce exposure of nearby communities to these pollutants and the subsequent risk of health effects, including respiratory morbidity and premature death.

A large body of scientific research indicates T-22-6 (B-6-6)

that oil and gas development associated with health impacts, empirical studies have found evidence of the following:

1) Higher reported health symptoms per person among residents who live close to gas wells.

2) Greater prevalence of adverse birth outcomes, including congenial heart defects, neural tube defects, and low birth weight for infants born to mothers who live in high densities of natural gas development.

Children, pregnant women, and the elderly are the most susceptible to these negative health impacts from oil and gas pollution. Let's keep our most vulnerable safe with a strong standard.

T-22-6 cont. (B-6 -6)

OG-T-23-Moeller

Thank you for this opportunity to testify.

MS. MOELLER: Good morning to the Board. My name is Jennifer Avila Moeller, and I come before you today as a mother, a concerned citizen of Porter Ranch, and a Southern California resident. Thank you in advance for allowing me a few brief moments to tell my story.

I am the mother of three beautiful children five and under. My son Mason is five and a half; Madison, two and a half, and Miles, nine months old.

I can remember October 2015 like it was yesterday. It was two weeks after I had given birth to our third child, Miles. I returned home from a

much-needed outdoor walk when I noticed a letter taped to my front door on Southern California Gas Company letterhead notifying me of the biggest Aliso Canyon blowout known to date. Naturally I panicked. I was horrified and stricken with more questions than I could fathom.

Baffled and looking for answers, I immediately relocated our family to a distant city away from our current dangerous and hazardous living environment. Prioritizing my family's health was of utmost importance, and this mamma bear was not taking any chances of jeopardizing my children's health or potential exposure to developing future illnesses.

Because of this catastrophe I urge you to address high levels of methane pollution in efforts to controlling oil and gas operations by considering the following options:

Fixed frequency inspections remove incentives to shift to loose annual inspections. A substantial portion of methane emissions across the supply chain come from leaks. That's why a leak detection and repair, LDAR, program that requires operators to regularly find and fix leaks is a straightforward cost-effective way to reduce oil and gas methane emissions. CARB's proposed rule initially requires quarterly monitoring of facilities but

T-23-1 (B-7-1)

allows for a step down to annual depending on whether operators find leaks. T-23-1 cont. (B-7-1)

Also, the implementation timetable needs to be faster. Recent amendments push back to the implementation of the rule by a year. California communities need reductions sooner than that. T-23-2 (B-7-2)

Did you know that children's lungs continue to develop after birth. Children breathe faster and spend more time outside than adults. That children are especially more vulnerable to air pollution in organs, much like a child's brain and reproductive system will continue to develop post birth. You can see why my sense of urgency to immediately relocate my family to safer and cleaner grounds was nothing less but my main priority when high levels of methane along with other cancer-causing chemicals such as benzene were being emitted into the air due to a lack of regularly regulated aging infrastructure in an oil-gas storage facility.

Living in a dense and overly populated city such as Los Angeles where driving vehicles is a commonality, smog and air pollution is already a heavy and weighted ongoing issue, let alone allowing for the release of high levels of methane into the air.

As parents and grandparents, I leave you with this question: What would you have done?

OG-T-24-Pakucko

Thank you for your time.

MR. PAKUCKO: Hi. My name is Matt Pakucko. I'm the president and co-founder of the group called Save Porter Ranch, a nonprofit citizens education and action group; and I live right next to the blownout Aliso Canyon well.

So I know firsthand the effects that methane and its components have on people. And I'm saddened and real tired of hearing and seeing daily, still, after the blowout was supposedly stopped, of nosebleeds, rashes, headaches, asthma, and other respiratory and breathing problems from people that live near that facility.

So what I'm concerned about, as much as we rely under the new regulations, there's much reliance on local agencies to enforce the regulations. What's missing is clear enforcement and penalties for noncompliance.

In the case of Aliso Canyon, our local AQMD failed to do anything substantial even in the biggest blowout in, what, U.S. history. They gave a slap on the wrist, saying they have little authority over the operation of the facility, and issued that a temporary abatement order, which did little more than to monitor the problem, didn't actually stop anything. T-24-1

So who has the authority to do something, to actually stop emissions? To actually shut down a repeat

or major offender that keeps on violating?

Apparently nobody, as we found out in the Aliso Canyon situation. Every agency claimed that it's not their jurisdiction to actually stop the emissions. It took, you know, a State of Emergency declaration by the Governor. Is that what it's going to take when there's an ongoing offender? Fines and more fines by our local agencies doesn't stop emissions from going into our lungs. T-24-1 cont.

So what has worked and subsequently uncovered more massive failures by SoCalGas, including finding that many, many, a huge number of their wells failed basic integrity inspection, is shutting down the facility. The penalty of a facility shutdown must be included and enforceable by the State. This is the one thing that has been proven effective in getting the industry to do the right thing and actually stop the emissions. T-24-2

And regarding the step-down thing, a step-down -- I'm glad you guys are trying to make it quarterly, because at our facility alone continuously leaking after all the scrutiny that's going on there. T-24-3

March 18th, Termo, another operator, was busted by DOGGR illegally venting methane.

April 13th, another mysterious gas release. 43 complaints to the AQMD.

April 16th, Crimson Resources, another operator,

oil spill and gas release.

July 2nd, another pipeline leaking by SoCalGas. Our own real-time monitoring system shows spikes in methane every day.

So, yeah, we need quarterly, at least, if not a real-time monitoring fenceline around all these facilities, because this is just -- this is just one. We got 13 of those in the State. And this place is already under tremendous scrutiny and it's still spewing. So we need to get a little more stringent on that one. T-24-4

Thank you very much.

CHAIR NICHOLS: Came right under the buzzer too. That's great. OG-T-25-McGavern

MR. MAGAVERN: Good morning. Bill Magavern with the Coalition for Clean Air. And this is a rule that, as you know, has been in the works for a long time. I think your staff have done an excellent job of holding public workshops and listening to the input of a number of parties. And now I think it's time for you to take this first step and hope that the second step will happen early next year so that we can get this rule into effect.

It's important I think nationally and internationally. As you know, methane is a very important short-lived climate pollutant. And it's also important for the health of our communities. As you've heard from

people who live in Porter Ranch, who live in the San Joaquin Valley, these oil and gas facilities have a lot of impacts on people who live near them. And this rule will help to reduce some of the volatile organic compounds, some of the air toxics that are coming out of these facilities.

As you've heard, the proposal does very well in terms of cost effectiveness and also does provide benefits in addition to just reducing the emissions of methane.

And on the methane, I think it's very important that this rule does use the 20-year time frame for estimating global warming potential. And given the urgency of the climate crisis, it's very important that this Board continue to look in terms of 20 years or fewer rather than the extenuated 100-year lifetime. T-25-1

We're glad to see that there are other requirements for vapor collection and for NOx reduction.

And what's particularly important in the staff proposal is the removal of the step-down for the leak inspection. As you've heard, it's important to be consistent with U.S. EPA, and to recognize that annual or even semiannual inspections are not frequent enough. We do need to have the quarterly inspections. T-25-2 (OP-11-2)

Given the urgency that we've talked about, we do hope that this rule will be implemented as soon as T-25-3 (OP-11-3)

possible. I know they still have some steps to go through with your final approval and also with OAL, but we're hopeful that some of it could be implemented before January 1st of 2018, which is a year and a half away. T-25-3 cont. (OP-11-3)

And also, we're supportive of any efforts to try to get additional resources to the air districts to help them to enforce this important rule. T-25-4

Thank you.

CHAIR NICHOLS: Thanks.

MR. HECTOR: Hello. My name is Jason Hector. You can put me down as a Porter Ranch resident. And --

CHAIR NICHOLS: I think you stepped ahead of your turn. Keith Nakatani was next.

MR. HECTOR: Sorry about that.

OG-T-26-Nakatani

MR. NAKATANI: Thank you.

Good morning. Keith Nakatani. I'm with Clean Water Action. Our mission is to protect the environment, health, and economic well-being of communities. We're a national organization with over a million members.

First we'd like to thank the Air Resources Board for the methane regulations. But given the magnitude of the problem, we urge you to strengthen the regs, as you've heard from several speakers. T-26-1

I think it's also important to highlight that the methane emissions are not only a hugh environmental

problem, but they're also a huge public health issue. I was really glad to see my colleagues from the Central Valley and also the Porter Ranch residents highlighting the public health impacts.

So Aliso Canyon of course is something that everyone knows about. But what is less well known is that almost five and a half million people in California live within one mile of an oil or gas facility. That's almost 14 percent of the State's population. So the nausea, nose bleeds, dizziness, asthma, skin rashes, and other afflictions that people near Aliso Canyon experienced are experienced by residents of other communities on a regular basis.

For example, the town of Lost Hills, which is about 40 miles from Bakersfield, northwest of Bakersfield, is situated immediately adjacent to the Lost Hills Oil Field, which is the sixth largest oil field in California. So it's a huge facility.

If the Board members have not taken a tour down to Kern County - I'm sure some of you have - I would urge you to do so. To say that it looks other-worldly is a major understatement.

As Lost Hills is immediately adjacent -- is immediately east of the oil fields and the prevailing winds blow from the west, the noxious odors blow through

town on a regular basis. And so the residents, who are predominantly low income and Latino, regularly suffer from those afflictions that I mentioned before. Again, almost five and half million Californians live within a mile of an oil or gas facility.

Reducing methane emissions is an environmental issue, but it's also an issue of fairness and justice. Please keep this foremost in mind as these proceedings go forward.

Again the proposed regulations are a good start. But you need to do more to strengthen them.

Thank you.

CHAIR NICHOLS: Thank you.

OG-T-27-Hector

Okay. It's your turn now, Mr. Hector.

MR. HECTOR: Thank you. My name is Jason Hector, Porter Ranch of residents. I was asked to speak on behalf of our community by Moms Clean Air Force. I want to thank them. I want to also thank -- it's an honor and pleasure to speak in front of the Board here.

And I want to tell you I'm a long-time resident of Porter Ranch. I'm a husband, a father of an amazing three and a half year little girl. I'd taken care of my elderly grandmother for over a decade. She was 98 years old and went through this gas leak with us together.

Or I -- number one, I want to say that the

T-27-1 (B-8 -1)

step-down provision, I agree with staff, that should be removed so they can get leaks fixed quickly. Number two, the time frame should be as quick as possible. I know some industry folks that are complaining about that. But if they would have been doing the preventative maintenance that they knew about, you know, they're aware all of these facilities were in shambles and they could have been doing this a long, long, long time ago. So stop bellyaching about it. T-27-1 cont. (B-8-1) T-27-2 (B-8-2)

During the massive gas blowout I personally experienced severe headaches, nose bleeds, blood in my phlegm, lethargy, sick feeling, extreme allergy-like symptoms. My daughter had difficulty breathing and other sickness symptoms for a long time, even after we relocated. My first severe symptoms started after being outside and exposed to the methane blowout for several hours. I suffered from a severe headache and my wife felt very dizzy. After speaking with public health officials, we left our home, checked into a hotel. My 98-year-old grandmother was relocated as well. Unfortunately when we returned to our home to pick up clothes and mail and things like that, we'd get sick.

I'm very concerned about the health effects of children who live and go to school near oil and gas facilities.

We still don't know the chemicals they may have been exposed to since they haven't been -- they've been deemed confidential and proprietary. Once moving back oily residue was found in the parks; and since, we haven't returned to those areas. T-27-3 (B-8-3)

I'm concerned about the concept of storing gas underground. It's a flawed concept in my eyes. There's not a steel scuba tank underground to ensure containment of this very high pressure reservoir. Also, how can we confirm there are not leaks coming up from this reservoir? We're talking about geologic formations here. And I submitted for the record the fault lines that run through Aliso Canyon. How can we be sure that the gas is not moving up through the reservoir, through the ground and through the water as it reaches the surface? T-27-4 (B-8-4)

And I submitted a lot of data for you to review because I'm making testimony to the South Coast AQMD regarding the leak detection programs. Just a few quick suggestions. NASA and JPL have drones that they're working on, they're mobile, for monitoring methane. I think this needs to be incorporated, along with the LI-COR vehicle which you are probably all familiar with, the mobile methane monitoring vehicle. We need that vehicle on site daily at Aliso Canyon and other facilities too that have nearby communities. T-27-5

Thirdly, I think they should develop an "I smell it" application where people in communities once they smell it they can hit the app and send it right to where it needs to go. T-27-6

Thank you very much.

CHAIR NICHOLS: Thank you.

Les Clark.

Take your time. It's okay.

Good morning. OG-T-28-Clark

MR. CLARK: Madam Chairman, good to see you; Board members. My name's Les Clark. I'm with the Independent Oil Producers Agency. Represent a lot of the mom-and-pop operators in the Kern County area.

I have some concerns with the reg. But we've been working with your staff to address a lot of those concerns, and I'm appreciative of that, and we'll continue to do so. A lot of work to be done.

I think one of my biggest concerns is -- now, you've addressed it, but I still want to make a point and that's the registration as far as who's going to be running this program. Is it going to be the Air Resources Board or is it going to be the local air district? T-28-1

I went through this about -- about 12 -- 10, 12 years ago on registration. And I'll tell you at that time, it was confusing. No one knew who was on first

base. So no matter what happens, it needs to be clearly defined as far as I'm concerned. T-28-1 cont.

And we don't want to be, like you said earlier, double jeopardy as far as who's actually enforcing the rule. T-28-2

I'd also like to mention some of the words that most people ignoring, and that's technically feasible and cost effective. And I think as we go through this regulation, those two -- or that phrase needs to be considered. T-28-3

As you know, in Kern County we're over the last month -- or year and a half, we're probably around 3,000 jobs lost in the oil industry.

And what this regulation will do will add to that cost of producing a barrel of oil. So that means -- that's called lifting cost. So that means there are probably more jobs lost for that. So I want to make sure everybody knows that. Everybody talks about health. I'm with it. But I live in an area too right next to an oil field in Taft, California. In fact, I think I'd probably be considered an EJAC recipient myself, I've lived there so long. But there was a gas-like coast right by my place, so -- but I would just caution and let's use some common sense as we develop this regulation.

I appreciate the time to be here. Thank you.

OG-T-29-Pitcher

CHAIR NICHOLS: Thank you.

Okay. I think we have now arrived at the group presentation. Is this -- okay, we have four more and then we are finished with the witness list.

MS. PITCHER: Good morning, Chair Nichols. The three speakers behind me do acquiesce their three minutes to me. So there'll just be one speaker.

Good morning, Chair Nichols and members of the Board. My name's Jenifer Pitcher, and I'm a life-long resident of Bakersfield, and I represent the Western States Petroleum Association. WSPA is a nonprofit trade association representing companies that explore for, produce, refine, transport, and market petroleum and petroleum products in California and four other western states.

WSPA and WSPA member companies as key stakeholders have worked extensively with ARB staff for well over a year in the development of the methane regulation. Staff has accompanied us in the field to observe voluntary testing that WSPA members conducted on circulation tanks in the rule development process.

From the beginning of the rule development process we have emphasized the importance of ensuring that the methane regulation recognizes existing control requirements and does not unnecessarily impose duplicative

T-29-1 (OP-10-93)

requirements on operations. In that regard, it is important that the final regulation be consistent with current, successful local, state, and federal air quality regulations. T-29-1 cont. (OP-10-93)

On Monday, July 18th, we provided extensive comments to your Board and staff. WSPA's concerns with the rule as currently written are centered around:

ARB's focus on insignificant emission sources; questionable emissions estimates; proposal of nonexistent control technologies; duplicative requirements with other regulations; and the increasingly compressed timeline for implementation.

So my comments today will summarize the following key issues that need to be resolved:

The first, significant source of methane emissions; secondly, circulation tanks; third, gauge tanks; fourth, leak detection and repair, or LDAR; and, five, the compliance schedule.

So first, for insignificant sources of methane emissions. As WSPA has previously stated in our previous written comments, we believe that this rule unnecessarily focuses on insignificant emission sources, like circulation tanks and gauge tanks. T-29-2 (OP-10-41)

For example, circulation tanks have an average methane emission of 26 pounds per tank per event. To put

that into context, 26 pounds of methane is about 10 percent of the annual emissions of natural gas consumption used in a two-person household, and there's more than 12 and a half million households in California.

T-29-2 cont. (OP-10 -41)

WSPA does not believe the ARB's focus on small sources of methane emissions, such as circulation tanks that are a total of 72 metric tons of methane statewide, is efficient or necessary to achieve the statewide 40 to 45 percent methane reduction goals.

Secondly, circulation tanks. ARB is proposing control requirements for circulation tanks beginning in 2020. As noted in our comments, we remain concerned that there are no feasible control technologies currently available that can achieve the requirements to be able to meet 95 percent control efficiency, including disposal - and I want to emphasize the disposal - of the methane without the use of supplemental fuel and/or that can be disposed of in a safe manner.

T-29-3 (OP-10 -3)

So for -- to point out to Senator Florez's question earlier about the NOx, we cannot have flares without supplemental fuel because it's a low quality of gas and it's noncombustible -- expected to be noncombustible according to our studies. So essentially we have no compliance mechanism, and we addressed this in our comment letter. So I urge you to read that section.

And, Dr. Sperling, this also addresses your concern from earlier.

While there are ideas and concepts that ARB staff presented to you today, right now they are just that; they are ideas and concepts which have not been proven that they will work without compromising worker safety, which is always our number one concern.

We would also point out that these concerns were not addressed in the Environmental Assessment. And that is in the event that no technology meets the proposed requirements by January 1, 2020, operators would essentially have no viable compliance options to comply with the 95 percent control requirements and would have no choice but to shut down.

ARB must consider all potential scenarios and allow operators alternative compliance mechanisms for all potential sources beyond 2020. Therefore, we recommend ARB revise the section on circulation tanks to allow the continued use of best management practices beyond 2020 if no control technology is developed.

Without such clarifying language in the regulation, the language as written would prohibit hydraulic fracturing after 20 -- after January 1, 2020. We do not believe the NOx gap is closed.

So, Chair Nichols, we were just basically asking

T-29-3 cont. (OP-10-3)

to be -- for this to be clarified in the rule that if such technology is not developed by 2020, that we would continue to use best management practices until that technology is developed. T-29-3 cont. (OP-10-3)

Gauge tanks are another small source of methane emissions, representing less than half a percent of ARB's estimates for separator and tank systems. These tanks were not mentioned or discussed in any of the previous versions of the rule, in ARB's economic impact analysis, the standardized regulatory impact analys -- or assessment, or the SRIA, or the draft environmental assessment. T-29-4 (OP-10-2)

We are concerned with the last-minute addition of this source category without conducting any feasibility studies or economic impact analysis associated with requiring vapor recovery systems on these tanks.

We have included in our comments technical data and information about our concerns on this issue.

In addition, we also urge you to review our comments in regards to the separator and tank section of the regulation and request ARB consider and incorporate our proposed recommendations. T-29-5 (OP-10-5)

The fourth, the leak detection and repair. While we appreciate staff's efforts working with us on the LDAR requirements and the goal of ensuring that implementation T-29-6 (OP-10-4)

of the LDAR program is as efficient as possible; i.e., having one inspection program, we remain concerned with this section. As written, it still will result in two sets of inspections; two programs; and two record-keeping requirements, one for the local APCD, one for the ARB, as the programs differ so much in details.

It appears that a staff objective of recognizing existing district programs will not be achieved. Also, as currently written an LDAR program will be required for equipment that in practical use or practical application does not have the potential to emit methane.

The LDAR requirements in the proposed regulation will present significant difficulty for owners and operators to find enough competent contractors to perform and correctly document inspections; not to mention the additional staff time it will take from both the operators and ARB staff or APCD staff should you defer implementation to the districts.

In addition to these concerns, we noted staff's recommendation to remove the step-down. We do not support this. APCDs in California have a long history of LDAR programs and we look forward to working with staff on that and on this proposed recommendation.

Lastly, the Board approved -- the final Board approval of the rule appears to be scheduled for early

T-29-6 cont. (OP-10-4)

T-29-7

T-29-8 (OP-10-36, OP-10-63)

2017, which was pushed back significantly from the original intended adoption date. Well compliance deadlines of January 2018, this leaves 35 air districts in California less than nine months to develop, refine, receive, and consider comments and finalize their own rules in order to implement this regulation the ARB will have been working on for over two years. As you know, the districts are bound by certain statutory processes that will most likely not be able to be completed in the time frame allotted in this rule. The compliance deadlines in the rule should be extended to allow time for APCDs to develop rules to implement the new regulation and for operators time to comply.

T-29-8 cont. (OP-10--36, OP-10-63)

We do support most of staff's recommendations as listed in Attachment A. We also urge the Board to include certain clarifications as discussed and our recommendation on the circulation tanks.

WSPA and our members thank you for the opportunity to comment. I urge you to review our comments we've submitted on this last go-round or any of the comments on the technical justification for arguments, and we look forward to continue to work with staff and management prior to the next hearing. Thank you for your time today. I am available for questions, as are our technical experts.

Thank you.

CHAIR NICHOLS: Okay. And you now have spoken then for all of the group?

MS. PITCHER: That's all of it, yes.

CHAIR NICHOLS: Great.

0G-T-30-Pistey-Lyhne

MS. PITCHER: Thank you.

CHAIR NICHOLS: Thanks, and appreciate your detailed comments.

We do actually have one additional late sign-up here. So a representative from PSE Healthy Energy.

And this is the last witness.

MS. PISTEY-LYHNE: Good afternoon, Chair Nichols, commissioners. My name is Daisy Pistey-Lyhne, and I'm with PSE Healthy Energy.

We're here today to submit comments on this regulation. And, first of all, we are submitting these comments on behalf of PCE Healthy Energy, a national energy, science, and policy institute that supports the adoption of responsible evidence-based energy policies that aim to protect the climate, public health, and the environment.

We are very pleased that these regulations are moving forward, both in light of the Aliso Canyon gas leak disaster, the recommendations of the California Council on Science and Technology's independent scientific study of

well stimulation completed last year, and the national commitment made by the Obama administration to reduce methane leakage from the oil and gas sector by 40 to 45 percent by 2025.

We strongly support CARB's proposed standards for crude oil and natural gas facilities and especially appreciate your leadership in proposing these standards simultaneously for both new and existing sources. These will be strong regulations and will be leading the nation. And we encourage swift implementation of these standards to mitigate climate change and protect the health of Californians. T-30-1 (B-11 -1)

We would like to see some improvements to these proposals to ease public participation in the regulatory process, especially with respect to the LDAR program as described below. First of all, we would like to see CARB not take a step-down approach, as staff has recommended, to enforcement. CARB should maintain a consistent standard for inspection frequency. Under this proposal, failing to discover leaks can lead to ease requirements and less frequent inspections. And this is flawed, because the absence of a leak reveals nothing about the probability of a future leak. T-30-2 (B-11 -2)

If failing to detect leaks can result in reduced requirements for inspections, companies are incentivized

to encourage less rigorous inspections. Operators may find it in their best interests to not find leaks rather than repair them. This reproach may set a poor regulatory precedent as methane leakage is regulated in other states and at the federal level and for regulations of other pollutants. T-30-2 cont. (B-11-2)

If addition to these regulations, we also urge CARB to engage in community scale air quality monitoring to ensure that communities exposures to air toxics attributable to oil and gas development are not elevated beyond thresholds for health. T-30-3 cont. (B-11-3)

We also recommend that CARB consider the implementation of minimum surface setbacks, as recommended in the CCST independent scientific study of well stimulation completed last year. T-30-4 cont. (B-11-4)

We applaud your attention to underground storage with special monitoring requirements. And we are conducting a nationwide study of best practices on gas storage facilities currently. The proposal to have the ability to remotely access readings from the continuous monitoring of ambient air from underground natural gas storage facilities by 2018 will be important.

Sorry.

CHAIR NICHOLS: Thank you. Your time's up.

MS. PISTEY-LYHNE: Okay. Thank you.

CHAIR NICHOLS: Thank you.

Okay. That concludes our witness list, so we can close the formal record at this point and proceed to some Board discussion here. Maybe we can just start off if anybody has any specific questions that they want to ask of the staff at this point or ask staff to respond to any of the comments.

Ms. Berg.

VICE CHAIR BERG: Just to get us started, could staff go over the process once again from this time going forward, what you're going to be looking at, kind of what direction you're taking. That might be helpful in formulating some of our questions up here.

SENIOR ATTORNEY SEGALL: Sure. I'll started, Vice Chair.

Our plan going forward is to continue many of the collaborative processes we've already been undertaking with stakeholders and members of the public in the air districts. So we'll be exploring with CAPCOA and air district staff appropriate memoranda of understanding to help clarify implementation and enforcement, as you heard from today. And we'll also be working with many of the technical stakeholders, environmental justice groups, and members of the public on many of the technical issues you've heard about. So you'll see that reflected in a

15-day package when it comes back to you.

CHAIR NICHOLS: Yes, Supervisor Serna.

BOARD MEMBER SERNA: Thank you, Chair Nichols.

There's a question of the economic analysis as it related to the LDAR that was mentioned by one of the speakers; and it sounded to me like there was a pretty distinct noticeable difference of opinion there in terms of the actual impact. I'm wondering if Emily can maybe chime in and maybe give us an idea of where you think maybe that difference of opinion -- what the genesis of that is.

CHIEF ECONOMIST WIMBERGER: Yes. No, I think it's really important to get the numbers right to the extent that we can. So we will be taking a careful look at the analysis that was done.

There were a few different pieces that were done on the economic side. As you've heard, this has been sort of a lengthy process to get the regulation through. So there was an addition -- an initial SRIA. There was an original macro-economic analysis that was submitted to DOF I think in April of last year. And then that was recently revised to reflect all the changes that this regulation has undergone.

So we do want to make sure that the numbers are right and that we are looking at all of the right pieces.

We were -- we're happy to work with the different stakeholders to make sure that what they're seeing -- if they have better data, we want to use that better data. We do want to get these numbers right.

BOARD MEMBER SERNA: Thank you.

CHAIR NICHOLS: Yes, Professor Sperling.

BOARD MEMBER SPERLING: You know, like many, I'm very alarmed by what's happening with climate change, and I'm a strong advocate of many policies and regulations. But I have to say, kind of looking at it big picture, I am somewhat apprehensive about this whole set of regulations.

We are talking about really a small source -- relatively small source. We're talking about four percent of the methane, which is about 20 percent of the total. So we're talking about less than 1 percent of the problem. And then we're talking about a huge number of small sources. So that 1 percent is really thousands of smaller sources.

And then I hear from CAPCOA about the difficulty of adopting and enforcing all of these regulations. So I -- I'm a little queasy about this overall thing.

But to give it a positive twist, you know, given that we've gotten this far, I would suggest -- I would kind of urge that we really think really deeply about what are the really big problems, the big sources, and stay

focused on that and try to do things that really are cost effective and are going to have a big impact. And there are failures. There's the Aliso Canyon example. But that's not -- as I understand it, would not have been prevented by anything that we're proposing here.

And so -- you know, so that's one principle that -- if we can use.

The other principle is -- it's more of a question -- is, do we need to be really leading on this so much? I mean, this is not -- this is a greenhouse gas regulation. It's a global problem. It's not a health problem. Yes, I understand there can be small amounts of co-pollutants, but it's essentially a greenhouse gas regulation, and EPA -- as I understand - so I'm not an expert in this - EPA is moving in the same -- is going to be adopting rules for these same sources at least in a general sense.

So I don't know that there's -- so I think it's more that we should think about this going forward with, you know, the kind of regulations we do and the policies we do. We have limited staff, limited resources; you know, we can be imposing a lot of costs. So a note of caution.

CHAIR NICHOLS: You know, your comments, I probably give you the factual background, but come to kind

of a different conclusion.

I have lived through the experience of the whole leak detection problem and early days of working on VOC regulations where we were worrying about valves and flanges and floating roof tanks and things. There's a few of us around who still remember all of that.

By focusing on that issue, we did really move the whole state of the art and the state of technology around these facilities. And, yeah, at the time, it wasn't -- the leaking wasn't worth it to the companies to fix it. This was a product there for them to really, you know, care about recapturing. And in the end, they began to realize that this was something that they were going to have to pay attention to, and the state of housekeeping improved enormously as a result of it. And to a big extent, this a housekeeping issue that we're dealing with.

I mean it's expensive and annoying to have to look all the time for leaks. But what we see is that there's a huge amount of leaking going on relative to the total amount of the product.

So, you know, the alternative -- and there have been people who have suggested that this is the correct alternative -- if you really want to look at the big picture and the biggest cost effectiveness, get rid of the product, switch to something else that doesn't leak. I

mean, that's the answer - just use less of it. And then, lo and behold, there's a lot less leaking.

Because whatever is out there is going to leak to some extent, and we're not going to be able to prevent a hundred percent of it. So you're right on that point.

I just -- I think that obviously there's a -- there's a question here about, you know, how perfect we can be. But I do really like the new emphasis on the public side of this information, because living in Los Angeles where we have old wells -- I'm not talking about the current storage facilities. There's only a couple of those. I'm talking about abandoned facilities out there in communities as well as all kinds of still small mom-and-pop type operations going on, the public when they find out about these things oftentime become fixated on them and, you know, to the level of really having health issues just associated with the anxiety of living near some of these facilities.

And people need to know what's going on. They need to be able to assess what's happening and to know that there is at least somebody looking at the problem, and making sure that they have access to that information and to know that the standards are being maintained.

So unfortunately, I don't think we have any option of just not doing it at all. And the question is,

if we're going to do something, you know, how do we do it as -- in as pointed a way as possible.

And Supervisor Roberts has something to say on that point, I know.

BOARD MEMBER ROBERTS: Thank you, Madam Chairwoman.

You know, as somebody who has trouble understanding the plumbing in my own house, to look at the complexity of all these valves and all of that stuff is -- I have to admit is a little bit beyond me. But I do know, when you have a leak, you fix it. So in that sense, it seems to me that there's some good reason to move ahead on this.

I was concerned and I think with a point that was already made in terms of the -- seems a wide discrepancy on the economic analysis; and I understand staff's going to address that.

There was one other point that was made, and I think it might have been made a couple times, and I think it might have been Tim Carmichael that made it, and he referred to an effectiveness because of coordination between efforts of agencies. And I hope staff will dig into that and find what's being referred to and -- we don't need inefficiencies that drive the cost without any benefits. We -- you know, that's not been part of our MO.

So I hope we'll understand fully. It wasn't clear to me exactly what's happening, but it sounded like there may be duplication of efforts and an overlap of responsibilities that could be driving some of that cost without a commensurate benefit.

So I'd like to make sure that staff looks into that also, and lets us know what they would find.

CHAIR NICHOLS: Yeah, I see head nodding at the staff table. But maybe we could just be explicit and say that, you know, before we go final with this, that we'd like to see a plan for implementation that includes some understanding of the roles of the various entities that have authority here.

I'm going to turn to Mr. De La Torre since he hasn't spoken yet.

BOARD MEMBER DE LA TORRE: Thank you.

I want to congratulate staff. I think -- and I don't do this often. It's just I think I take it for granted that you know that we appreciate you.

(Laughter.)

BOARD MEMBER DE LA TORRE: But for a first-time-ever regulation, in an issue area that it's fraught, I didn't hear a whole lot of disagreement. I mean, obviously, you know, the folks on the industry sides have some concerns and then folks on the advocacy side had

a couple of concerns. But there isn't a whole lot. For something like this, it is really impressive that the areas of disagreement are relatively narrow. And so I wanted to thank you for all of the work that you put into it to get us to that point.

And obviously we'll hash those things out, as we always do, and well have to make decisions on those tough few things.

And then the other point I wanted to make is, unlike the federal, this is for new and existing. And again, for the people of California, for us to be looking at all of this -- I mean, we are an agency that regulates gallon gasoline cans. We regulate antiperspirant spray. So, I think this on the scale of things is a little more important. And so I'm very, very proud that we're here today and we're going to be moving this along.

Thank you.

CHAIR NICHOLS: Thank you.

Yes, Mr. Serna.

BOARD MEMBER SERNA: Thank you, Chair.

So I think that this is one of those issues that really -- an opportunity that really requires us to reflect back on our mission as an agency and, that is, to first and foremost protect and promote public health, obviously with consideration for our economy. That's

clearly stated in our mission as well.

But, you know, I guess I'd respectfully disagree with my colleague, Dr. Sperling, in terms of viewing this as such a small element of what we're charged to do. I actually, you know, think it's very much a part of what we're expected to do in principle, regardless of the order of magnitude here.

And as was mentioned before we heard from the speakers today, this particular pollutant, this particular air contaminant does have a bearing on climate change and our charge to address that and greenhouse gas emissions, but it also has a very important health aspect; and I'm very glad to see that the folks from Aliso Canyon, near Aliso Canyon showed up today to give us a very I think relevant -- some very relevant testimony about their personal experience, having gone through the largest gas leak in the history of this country.

So I -- you know, I'm very prepared to support what's in front of us today. I think it -- the alignment of what we're being asked to consider with our mission as an agency is crystal clear for me. So I'm prepared to move the item at the right time, Madam Chair.

CHAIR NICHOLS: Okay. Thank you.

Yes, Ms. Takvorian.

BOARD MEMBER TAKVORIAN: Thank you. And I have a

couple of comments and then a question for the staff.

I wanted to add my congratulations to the staff and thanks for a really job well done. I think this is a major, major issue. And certainly I want to thank everyone who came from the public, but especially to the community members who -- for whom I know it's very difficult to come to Sacramento. This isn't something that's easy for you to do. You have to make adjustments in your daily life to take care of your kids, to take time off work. And so I think all of us here really appreciate that you're here and that you represent some of the communities that are the most impacted by these pollutants and that have gone for so long with lax regulation or nonexistent regulation. So many of you are the ones who have both suffered the acuteness of the Aliso Canyon leak but also the chronic conditions that many of you, particularly like in Kern County, have expressed -- have endured over many decades

So I would say that to the degree that we can expedite the timeline and get this rule back in front of the Board in early 2017, that I think would be something that would be important to do because I think we need to be more responsive to the community members who are enduring this.

And with all due respect, I don't think that this

is something that anybody thought wasn't going to happen over the last several years. And I know you've been working hard on it. So I have confidence that all of the industries that need to are gearing up for this.

And I really do appreciate the removal of the inspection step-down. I think that's appropriate to do. It's clear that monitoring and disclosure works, transparency works, so let's inject more of that.

And I would agree with our Chair, that there are those that might join them to say there's a way to solve this problem, pollution prevention is a good way to solve it, and we switch to another source of energy and then we won't be doing -- we won't be arguing about whether it's too fast or too expensive. We'll be talking about how we can have a sustainable, renewable health-promoting source of energy.

So I think we are talking about that in other of our rules and others of our programs. So I appreciate that and I think it's appropriate.

My question is: I understand that - and I want to make sure I'm understanding this correctly - that Bay Area Air Quality Management District does have similar rules in place now; and I wanted to understand what the relationship is and comparison is between the standards that are being promoted or proposed in this rule and

those -- and how you see those integrating.

Thank you.

OIL & GAS SECTION MANAGER NYARADY: Sure. This is Jim Nyarady.

The Bay Area has -- currently has rules for refineries and they also have a rule for marine vessels and they have a rule for oil and gas fields, all of which have an LDAR leak detection component, but they do have different standards. Some go down to as far as a hundred ppm and some are as high 10 thousand ppm.

So what we've done in ours is to set a standard of a thousand ppm as the trigger. And the idea being mostly because we're, you know, looking at some sources that haven't been regulated before like the -- you know, the natural gas storage and so on.

So that's kind of the range that they have in the various rules.

BOARD MEMBER TAKVORIAN: But aren't the mechanisms similar in terms of the leak detection in terms of the equipment itself? And if those are working well at the lower levels, can you talk about why the lower levels weren't incorporated or what your thinking was about that?

OIL & GAS SECTION MANAGER NYARADY: Well, yeah, we were really looking at the other oil and gas rules that are out there, and the field rules so a lot of those have

2,000 ppm or a thousand ppm. So we were looking to be consistent in this effort of what the local air districts are doing with oil and gas inspection.

But, you know, clearly there's the, you know, looking forward to -- the idea of being that when these first get implemented, they usually start at a high number and then they lower down over time. So in the Bay Area's refinery rule, for example, it started higher; but as they controlled other parts of the refineries, the fugitive portion became a larger and larger portion, so they kept coming down in concentration for those. But we're going to be starting with some of these that haven't been regulated before and some are starting at the thousand ppm limit.

OIL & GAS AND GREENHOUSE GAS MITIGATION BRANCH CHIEF SCHEEHLE: I also just wanted to add on one point, that when you're moving from something like 10,000 to 1,000, you got a significant percentage increase in the leaks that you find; going from a thousand to 500 we found was in the like 1 percent -- a couple percent range. So we felt like this was a good place where we could get the majority of reductions.

BOARD MEMBER TAKVORIAN: Thank you.

CHAIR NICHOLS: Thanks. That's helpful.

I wanted to ask a question about the step-down,

because it's -- was raised by a number of the speakers. And I understand there's sort of an intuitive idea that if somebody's doing a good job, we want them to be able to inspect less, and that that could -- not having to do so many inspections would seem to be an incentive for people to do a really good job on leak detection and repair.

But, conversely, if we really believe that everything is going to leak eventually, I'm not sure that that's actually the right way to go about addressing the problem. And I'm -- I'd like to ask you sort of to justify your thinking a little bit more, especially with relationship to other safety situations that we know about, because it is safety as well as air quality that we're -- one way or another is implicated, and whether there are other alternatives that might be out there as incentives to people to do a really good job on the repair side of things as opposed to just doing less inspecting.

OIL & GAS AND GREENHOUSE GAS MITIGATION BRANCH CHIEF SCHEEHLE: Well, we -- there's several reasons why we decided to propose to remove the step-down, which was -- as you were saying, just because you find leaks, it doesn't mean that -- you know, just because you do that and you do that in a good manner for five quarters, it doesn't mean that you won't have a leak after that. So looking at the analysis that was out there, the scientific

papers about how leaks can occur at any time and any place, we decided that this -- you know, keeping the quarterly inspections was the appropriate way to do that, and to make sure that we're on the ground in a regular fashion to -- in order to address things like leaks that have happened at the storage facilities as well as -- because there were some that even happened after Aliso Canyon, I think somebody mentioned -- smaller -- but McDonald island, and there was another --

CHAIR NICHOLS: So your current position, just to be clear, is that you're not going to reduce the frequency of inspections?

OIL & GAS AND GREENHOUSE GAS MITIGATION BRANCH CHIEF SCHEEHLE: Yes, yes.

CHAIR NICHOLS: Okay. Great. I had gotten that backwards then. Thanks.

Other -- yes, Dr. Sherriffs.

BOARD MEMBER SHERRIFFS: Thank you.

I'd also like to congratulate staff. You know, you've clearly hit the sweet spot when we have angry mothers on one side and oil and gas on the other. So great job.

(Laughter.)

BOARD MEMBER SHERRIFFS: You know the co-benefits I think are worth emphasizing, because we're focusing on

methane, but part of the this regulation -- methane is not traveling alone. There are other chemicals we have to be aware of. And I am haunted by an early death in my practice related to a brain tumor, somebody working in oil and gas. And I worry about benzene and toluene and those other chemicals that we do know are associated with those kinds of problems. And I can't be sure -- I don't know if that death was associated with that, but certainly there's a strong literature that we need to be concerned about those kinds of things.

So the health co-benefits beyond methane alone are certainly very important.

You know, the districts know this is coming, and the San Joaquin District, we've talked about this at a couple of Board meetings. So the staff are gearing up. Clearly, not -- no details because the details are not out yet, but it's expected. And then in fact the district is looking forward to accepting this responsibility and working with the local stakeholders on it.

The other issue -- yeah, we want to focus on big resources. But again it's preventive medicine because it's the potential big sources. And so a lot of this is preventive medicine. And nobody should expect to be thanked for preventing something that didn't happen because nobody knows it didn't happen, unless they believe

in statistics.

(Laughter.)

BOARD MEMBER SHERRIFFS: But it is so important, it is such important work.

I guess I would want to be sure that staff rethinks, you know, 26 pounds per tank per event doesn't sound like a very big number. I'm not sure how many events per year we're talking about. So doing the math.

But I would also want to be sure that our friends, colleagues, collaborators, and the industry are looking at that and saying, "Well, if we think it's too hard to get it here, where is another place we could get that," kind of equivalency. So I think that's a fair question to ask too.

Thank you.

CHAIR NICHOLS: Yes, Mr. Gioia.

BOARD MEMBER GIOIA: Let me first start by saying I wouldn't call them angry mothers. I'd call them passionate mothers.

(Laughter.)

BOARD MEMBER GIOIA: So we appreciate you being here and being great advocates.

And I don't want to add much more to those who've already spoken, that I think that the staff has struck a balance on this. I think this is an important role for us

to have. And as we heard from the staff representative from the air district, there will be some additional regulations on top of what already exist at the Bay Area and intending to sort of look at these standards even further.

So I will be supporting this.

CHAIR NICHOLS: Any other comments here?

Well, Ms. Berg hasn't spoken on this issue, somewhat to my surprise.

So I'm going to say something about it. And it has to do with implementation in areas where you've got a lot of small operators working. I'm hoping -- I don't like to see exemptions or, you know, easier regulations when you've got a multiple city of small people, because you're still going to have a lot of emissions out there. But I would like to see if there's a way that we could facilitate some kind of reporting and monitoring requirements that could be effective across a group rather than having to be necessarily implemented separately by each and every one of these folks. And I think maybe the industry association might be helpful in that regard in terms of developing some sort of a methodology whereby a whole region could perhaps get together to make the process more cost effective. I just think that's something that's worth trying to figure out. If you can

facilitate that happening, it would be a good thing.

VICE CHAIR BERG: Thank you, Chair Nichols. I am working with several of the smaller groups and had a great briefing with staff, and have also had a couple of meetings with staff through this process. I'm very encouraged and really looking forward to continuing to facilitate between the groups that I'm working with and with staff. I'm getting very positive responses on both sides. There's several technical areas that I am pursuing for them.

CHAIR NICHOLS: Good. I'm glad to hear it.

VICE CHAIR BERG: And thank you for bringing it up.

CHAIR NICHOLS: Okay. All right.

So do we have a motion to approve the resolution?

BOARD MEMBER SERNA: So moved.

CHAIR NICHOLS: I'm sorry. You did it.

All right. Do we have a second?

BOARD MEMBER ROBERTS: Second.

CHAIR NICHOLS: All right. A second from Supervisor Roberts.

I think we can do this again by voice vote.

So all in favor please say aye.

(Ayes.)

CHAIR NICHOLS: Opposed?

And nobody is abstaining.

Okay. Terrific.

Thank you. Thank you, all. Thanks, everybody. This is obviously not the end. It's a point in the process and there's a lot of work left to be done, but we're all committed to seeing it come to a successful conclusion.

So, this is probably a very good time to break for lunch.

And give the court reporter a break too.

Okay. Let us adjourn and be back at 1:30 then.

Thank you.

(Off record: 12:23 p.m.)

(Thereupon a lunch break was taken.)